



## A Revision of the Genus *Autosticha* Meyrick (Lepidoptera, Oecophoridae) in Eastern Asia

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**Abstract** In a revision of the genus *Autosticha* Meyrick in Eastern Asia, 23 species are recognized. Among them, 16 new species (*suwonensis* n. sp., *consimilis* n. sp., *pentagona* n. sp., *lushanensis* n. sp., *mingchrica* n. sp., *latiuncusa* n. sp., *taiwana* n. sp., *leukosa* n. sp., *sichunica* n. sp., *cuspidata* n. sp., *bilobella* n. sp., *guangdongensis* n. sp., *dayuensis* n. sp., *sinica* n. sp., *hainanica* n. sp., and *pyungyanganis* n. sp.) are described from China, Taiwan, Japan, and Korea. Four previously described species in *Brachmia* are newly transferred to *Autosticha*: *A. philodema* (Meyrick), comb. nov., *A. quassata* (Meyrick), comb. nov., *A. impunctella* (Caradja), comb. nov., and *A. carphodes* (Meyrick), comb. nov. For all the known species, photos of adults and the male or female genitalia are provided, and a key to the species is given.

**Key words** Taxonomy, fauna, Korea, Japan, Taiwan, China, description, new species

### INTRODUCTION

The genus *Autosticha* Meyrick, 1886 was established based on *Automola pelodes* Meyrick, 1883 (monotypic), and was originally placed in the family Gelechiidae. Meyrick (1925) assigned it to the 9th group of the Gelechiidae. After Hodges (1978) placed it in Oecophoridae, its taxonomic position in the Oecophoridae has generally been accepted by recent workers: Minet (1986), Common (1990, 1994), Nielsen & Common (1991), Scoble (1992), and Ueda (1997). However, Hodges (1999) recently placed it, together with genera *Apethistis*, *Pachinistis*, *Procometus*, *Ptochoryctis*, and *Stoeberhinus*, in Autostichinae of the family Autostichidae. Many species previously placed in the genus *Brachmia* have been transferred to this genus. Ueda (1997) recently synonymized the genus *Sennolocha* Meyrick with *Autosticha*. Two previously known species of the genus *Brachmia* from China, of which Clarke (1969) provided the illustrations of adults as well as of either the male or female genitalia, are not included in this study, but they are transferred to the genus *Autosticha* according to their genitalic characters: *A. philodema* (Meyrick), **comb. nov.** and *A. quassata* (Meyrick), **comb. nov.**. The other two species of *Brachmia* (*tepidata* Meyrick, 1922 and *obtracta* Meyrick, 1922), which were described from Shanghai, China, and *B. insuavis* Meyrick, 1914, described from Taiwan, could not be confirmed for their generic status because their type specimens are not available to us. Moreover, the original descriptions for these three species are not helpful in comparing them with the new species that are described from China and Taiwan in this paper. Thus we were not able to eliminate a possibility of

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species being conspecific with one of these new species. *Brachmia impunctella* Caradja was described from near Chabarovsk, Russian Far East, based on a single female, and the type specimen is preserved in the Grigore Antipa Museum of the Natural History, Bucharest. This specimen was previously examined by Park (1996) and erroneously transferred to *Aristotelia*. However, it should be placed in the genus *Autosticha*: *A. impunctella* (Caradja, 1920), comb. nov..

The genus comprises about 50 known species in the world, mainly in the Oriental Region, parts of Europe, the Eastern Palaearctic region, South East Africa, and Australia. Many unnamed species, however, are expected to be described. In Eastern Asia, six species have been known from Japan, five from China and Taiwan, two from Eastern Siberia, and one from Korea.

## MATERIALS AND METHODS

Most of the material examined for this study are based on the collection in the Institute of Zoology, Academia Sinica, Beijing, China, and parts of specimens are from the Smithsonian Institution, United States National Museum, Washington D.C., USA, Osaka Prefecture University, Osaka, Japan, and the Center for Insect Systematics, Chuncheon, Korea. The color standard for the description of the adult wing pattern was based on "Methuen Handbook of Colour" by Körnerup and Wanscher (1978).

### Abbreviations for depositories:

BMNH—The Natural History Museum, London, UK

CIS—Center for Insect Systematics, Kangwon National University, Chunchon, Korea

FSCA—Florida State Collection of Arthropods, Gainesville, Florida, USA

IZAS—Institute of Zoology, Academy Sinica, Beijing, China

OPU—Osaka Prefecture University, Sakai, Osaka, Japan

USNM—United States National Museum, Washington D.C., USA

### Abbreviations for provinces in Korea:

SE—Seoul, GG—Gyunggi Prov., GW—Gangwon Prov., CB—Chungbug Prov., CN—Chungnam Prov., JB—Jeonbug Prov., JN—Jeonam Prov., GB—Gyungbug Prov., GN—Gyungnam Prov., JJ—Jeju Prov.

## SYSTEMATICS

### Genus *Autosticha* Meyrick, 1886

*Autosticha* Meyrick, 1886, Trans. ent. Soc. Lond. 1886: 281. Type species: *Automola pelodes* Meyrick, 1883.

*Epicharma* Walsingham, 1897, Trans. ent. Soc. Lond. 1897: 38. Type species: *Epicharma nothriforme* Walsingham, 1897.

*Epicoenia* Meyrick, 1906, J. Bombay nat. Hist. Soc. 17: 140. Type species: *Epicoenia chernetis* Meyrick, 1906.

*Prosomura* Turner, 1919, Pro. R. Soc. Qd. 31: 147. Type species: *Prosomura symmetra* Turner, 1919.

*Semnolocha* Meyrick, 1936, Exot. Microlep. 5: 49. Type species: *Semnolocha pachysiticta* Meyrick, 1936.

The genus is characterized by the forewing ground color of the pale brownish orange with three distinct discal stigmata and the series of blackish dots along costa or termen; forewing venation with  $R_4$  and  $R_5$  stalked or coincident,  $R_5$  or  $R_{4+5}$  to costa, apex or termen,  $CuA_1$  and

$\text{CuA}_2$  usually stalked but some separated (e.g., *A. pachysiticta* (Meyrick), *A. latiuncusa* sp. nov.); hindwing with  $\text{Rs}$  and  $\text{M}_1$  connate or stalked,  $\text{M}_3$  and  $\text{CuA}_1$  usually stalked but sometimes connate.

Larvae feed on moss, lichens and decaying vegetable matter (Meyrick, 1925; Ueda, 1997; Hodges, 1999).

#### Key to the species of *Autosticha* in Eastern Asia

##### External characters

1. Forewing with $\text{CuA}_1$ and $\text{CuA}_2$ separated .....	2
– Forewing with $\text{CuA}_1$ and $\text{CuA}_2$ stalked .....	7
2. Forewing ground color creamy white or whitish gray .....	3
– Forewing ground color brownish or grayish orange .....	5
3. Wingspan longer than 13 mm, with large dark-fuscous discal stigmata .....	4
– Wingspan shorter than 12 mm, with small dark-fuscous discal stigmata .....	
..... <i>cupidata</i> sp. nov.	
4. Forewing with $\text{R}_5$ absent; Hindwing with $\text{Rs}$ and $\text{M}_1$ stalked near base .....	
..... <i>sichunica</i> sp. nov.	
– Forewing with $\text{R}_4$ and $\text{R}_5$ stalked; Hindwing with $\text{Rs}$ and $\text{M}_1$ stalked near middle .....	
..... <i>pachysticta</i> (Meyrick)	
5. Wingspan longer than 15 mm .....	6
– Wingspan shorter than 13 mm .....	
..... <i>dayuensis</i> sp. nov.	
6. Forewing with plical stigma obliquely situated below 1st one .....	
..... <i>latiuncusa</i> sp. nov.	
– Forewing with plical stigma vertically situated below 1st one .....	
..... <i>taiwana</i> sp. nov.	
7. Forewing dark fuscous .....	8
– Forewing brownish or grayish orange, creamy white, or yellowish white .....	9
8. Forewing with $\text{R}_4$ and $\text{R}_5$ stalked near middle; Hindwing $\text{M}_3$ and $\text{CuA}_1$ connate .....	
..... <i>mingchrina</i> sp. nov.	
– Forewing with $\text{R}_4$ and $\text{R}_5$ stalked beyond distal 2/3; Hindwing $\text{M}_3$ and $\text{CuA}_1$ shortly stalked .....	
..... <i>sinica</i> sp. nov.	
9. Forewing ground color creamy white, or yellowish white .....	10
– Forewing ground color brownish orange, brownish gray .....	11
10. Forewing with brownish fascia near tornus; discal stigmata small .....	
– Forewing without brownish fascia near tornus; discal stigmata extremely large .....	
..... <i>tetragonopa</i> (Meyrick)	
11. Wingspan shorter than 12 mm .....	12
– Wingspan longer than 13 mm .....	14
12. Forewing brownish orange .....	13
– Forewing brownish gray .....	
..... <i>guangdongensis</i> sp. nov.	
13. Forewing with $\text{R}_5$ to termen .....	
– Forewing with $\text{R}_5$ to costa .....	
..... <i>pentagona</i> sp. nov.	
..... <i>bilobella</i> sp. nov.	
14. Forewing pale grayish orange .....	15
– Forewing brownish orange .....	16
15. Forewing with $\text{R}_{4+5}$ stalked with $\text{R}_3$ .....	
– Forewing with $\text{R}_{4+5}$ free from $\text{R}_3$ .....	
..... <i>pyungyangensis</i> sp. nov.	
..... <i>hainainca</i> sp. nov.	
16. Forewing with $\text{R}_{4+5}$ very close to $\text{R}_3$ at base .....	
– Forewing with $\text{R}_{4+5}$ moderate, not very close to $\text{R}_3$ at base .....	17
17. Hindwing $\text{M}_3$ and $\text{CuA}_1$ stalked .....	18
– Hindwing $\text{M}_3$ and $\text{CuA}_1$ connate .....	
..... <i>lushanensis</i> sp. nov.	
18. Forewing with a well-developed fuscous suffusion near tornus .....	19

– Forewing with a weakly presented fuscous suffusion or not near tornus .....	21
19. Hindwing grayish orange .....	<i>suwonensis</i> sp. nov.
– Hindwing pale grayish brown .....	20
20. Forewing with subcostal, subbasal dots near base .....	<i>imitativa</i> Ueda
– Forewing without such dots .....	<i>modicella</i> (Christoph)
21. Forewing with plical stigma obliquely situated below 1st one .....	<i>kyotensis</i> (Matsumura)
– Forewing with plical stigma vertically situated below 1st one .....	<i>truncicola</i> Ueda

Male genitalic characters

1. Valva elongate, quadrate .....	2
– Valva with fan-shaped distal part, forming a neck .....	22
2. Uncus broad, short, tongue-shaped .....	3
– Uncus slender, club-shaped, digitate, or sharply pointed apically .....	4
3. Valva parallel-sided, with round apex; uncus with round apex .....	<i>mingchrica</i> sp. nov.
– Valva narrower toward apex; uncus with incised caudal margin .....	<i>latiuncusa</i> sp. nov.
4. Valva with sharp, thorn-like process at apex .....	5
– Valva without such process at apex .....	7
5. Uncus long, slender .....	6
– Uncus heavily sclerotized, more or less sharply pointed apically .....	<i>sinica</i> sp. nov.
6. Apical process of valva short; juxta much longer than its width, deeply emarginate on caudal margin .....	<i>tetragonopa</i> (Meyrick)
– Apical process of valva long; juxta relatively wide, less deeply emarginate on caudal margin .....	<i>imitativa</i> Ueda
7. Uncus borad basally, pointed apically .....	8
– Uncus slender with pointed apex, thumb-like with round apex, or spatulate .....	12
8. Valva with process on costa or inner surface .....	<i>suwonensis</i> sp. nov.
– Valva without process on costa or inner surface .....	9
9. Valva more or less quadrate, width less than 1/3 of length .....	10
– Valva elongate, width about 1/2 of length .....	11
10. Tegumen very short; uncus short, less than 1/3 of valva .....	<i>leukosa</i> sp. nov.
– Tegumen moderate; uncus elongate, longer than 1/2 of valva .....	<i>cuspidata</i> sp. nov.
11. Valva necked medially, forming a semiovate distal part .....	<i>modicella</i> (Christoph)
– Valva elongate, forming a quadrate distal part .....	<i>opaca</i> (Meyrick)
12. Uncus slender with pointed apex .....	13
– Uncus thumb-like with round apex, or spatulate .....	16
13. Valva with a pair of processes on costa and inner surface .....	14
– Valva without process on costa or inner surface .....	15
14. Costal process very short; inner process situated near middle .....	<i>bilobella</i> sp. nov.
– Costal process longer than inner one; inner process situated near base .....	<i>taiwana</i> sp. nov.
15. Saccus long, longer than uncus .....	<i>sichunica</i> sp. nov.
– Saccus very short, about 1/3 length of uncus .....	<i>guangdongensis</i> sp. nov.
16. Uncus thumb-like with round apex .....	17
– Uncus spatulate .....	20
17. Valva with heavily sclerotized process on costa medially, without process on inner surface; uncus very short .....	<i>dayuensis</i> sp. nov.
– Valva without process on costa, with free process on inner surface; uncus moderate .....	18
18. Valva without process on inner surface .....	<i>pachystica</i> (Meyrick)
– Valva with process on inner surface .....	19
19. Process on inner surface of valva digitate; aedeagus with spine-like process at basal 3/5 .....	

- dorsally ..... *kyotenensis* (Matsumura)
- Process on inner surface of valva more or less triangular; aedeagus more slender, with spine-like process at 3/4 dorsally ..... *lushanensis* sp. nov.
- 20. Saccus very short, less than its width ..... *pentagona* sp. nov.
  - Saccus slender ..... 21
- 21. Aedeagus longer than valva ..... *truncicola* Ueda
  - Aedeagus shorter than valva ..... *consimis* sp. nov.
- 22. Distal part of valva extended inwardly; aedeagus about 5/6 length of valva ..... *hainanica* sp. nov.
  - Distal part of valva not extended inwardly; aedeagus about 1/2 length of valva ..... *pyungyangensis* sp. nov.

**1. *Autosticha tetragonopa* (Meyrick, 1935) (Figs. 1, 32, 32a, 33)**

*Brachmia tetragonopa* Meyrick, 1935: 75; Gaede, 1937: 545; Clarke, 1969: 377. Type locality: China.

*Autosticha tetragonopa*: Ueda, 1997: 111.

**Diagnosis.** Wingspan, 14–15 mm. This species has often been confused with the following Japanese species, *A. imitativa*, due to the similarity of the male genitalic characteristics. It can, however, be distinguished by the yellowish white ground color and large discal stigmata in the forewing.

Male genitalia (Figs. 32, 32a). Also see Clarke, 1969: pl. 377, fig. 1, and Ueda, 1997: fig. 11. Very similar to those of the following species, but the thorn-like process at apex of valva shorter; juxta quadrate, much longer than its width, with deep emargination on caudal margin medially; aedeagus more slender, with stronger spine preapically.

Female genitalia (Fig. 33). Also see Ueda, 1997: fig. 17. Ostium reniform, more narrowly opened than that of *imitativa* Ueda. Ductus bursae broad, sclerotized. Lateral arms of signum heavily sclerotized.

**Material examined.** Japan: 2♂, 1♀, Honshu, Gihu: Hakusan (Sirakawa) 20 VIII 1985 (T. Saito), gen. prep. no. CIS-4894, 4896 (♂), and 4909 (♀); Also see Ueda, 1997: 113.

**Distribution.** Japan (Honshu, Kyushu) and China.

**Remarks.** This species was described from China (Tienmu-shan). Ueda (1997) also recently reported it from Japan.

**2. *Autosticha imitativa* Ueda (Figs. 2, 34, 34a)**

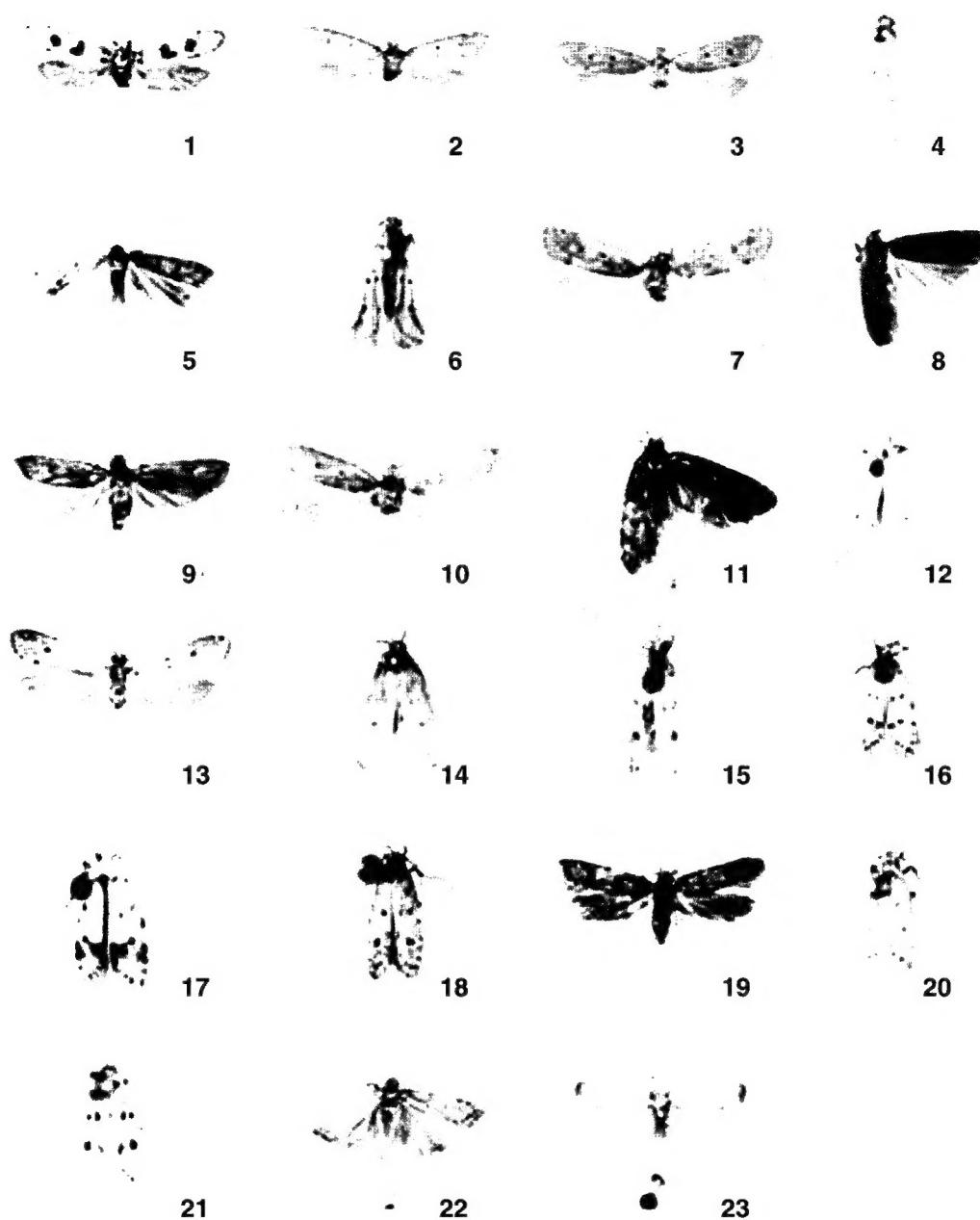
*Autosticha imitativa* Ueda, 1997. Jpn. J. Ent., 65(1): 108–126. TL: Japan.

**Diagnosis.** Wingspan, 14–15 mm. This species is similar to the preceding species, but can be distinguished from the latter by the brownish ochreous ground color of the forewing, and smaller discal stigmata. The male genitalia are also a good separable characteristic: valva with a long, needle-shaped process at apex; plate of juxta broader, less emarginate on the caudal margin; and aedeagus with a denticle on dorso-caudal margin, whereas on ventral margin near apex in *A. tetragonopa* (Meyrick).

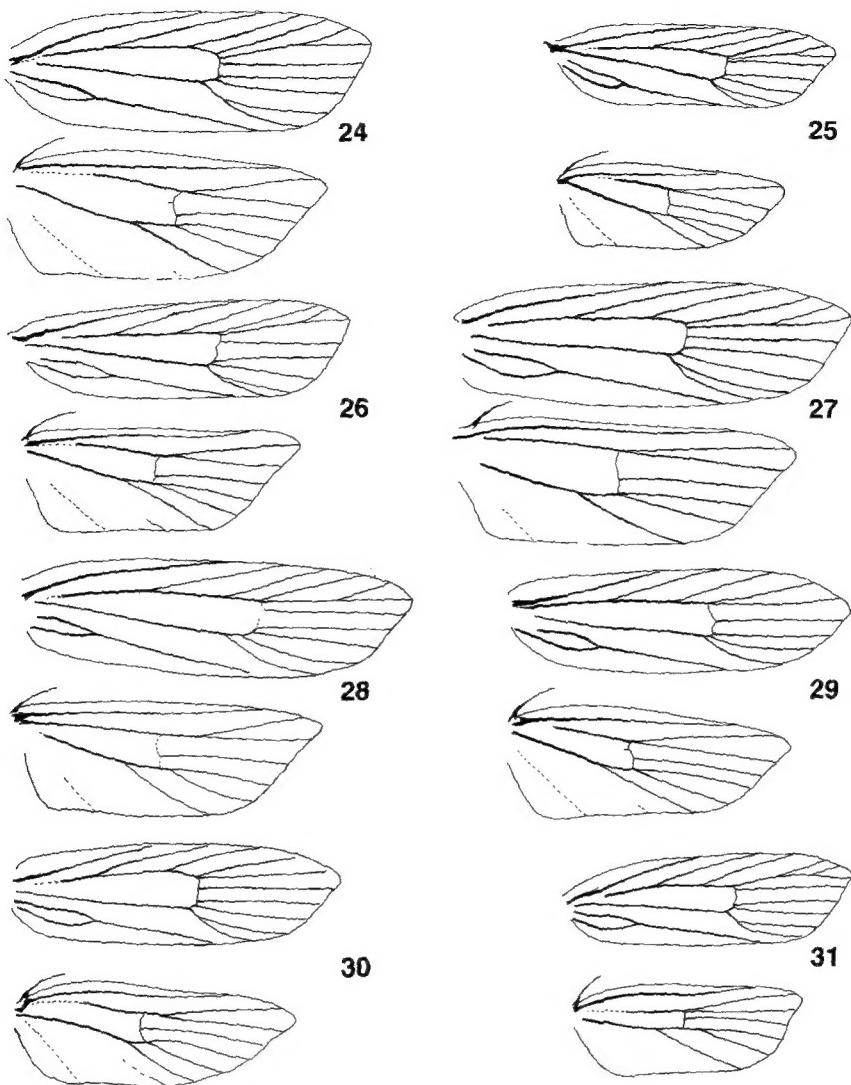
Male genitalia (Figs. 34, 34a). Also see Ueda, 1997: fig. 12. The general shape similar to that of the preceding species, but the valva with a longer process at apex; juxta less deeply emarginate on caudal margin medially; saccus shorter.

Female genitalia. See Ueda, 1997: fig. 17.

**Material examined.** China: 1♂, labeled “ZO SE”, “CHINE, Prov. Kiangsu, Shanghai, Musee Heude”, “28–6–33, A. Savio. coll”, gen. prep. no. W-92023, in IZAS. 1♂, Mt. Jingang-shan, Prov., Jiangxi, June 19 VI 1978, gen. prep. no. W-89327. Taiwan: 1♂,



**Figs. 1–23.** adults: 1. *Autosticha tetragonopa* (Meyrick); 2. *A. imitativa* Ueda; 3. *A. modicella* (Christoph); 4. *A. opaca* (Meyrick); 5. *A. suwonensis* n. sp.; 6. *A. pentagona* n. sp.; 7. *A. kyotensis* (Matsumura); 8. *A. lushanensis* n. sp.; 9. *A. truncicola* Ueda; 10. *A. consimilis* n. sp.; 11. *A. mingchrica* n. sp.; 12. *A. latiuncusa* n. sp.; 13. *A. taiwana* n. sp.; 14. *A. sinica* n. sp.; 15. *A. sichunica* n. sp.; 16. *A. cuspidata* n. sp.; 17. *A. leukosa* n. sp.; 18. *A. guangdongensis* n. sp.; 19. *A. pachystica* (Meyrick); 20. *A. bilobella* n. sp.; 21. *A. dayuensis* n. sp.; 22. *A. pyungyangensis* n. sp.; 23. *A. hainanica* n. sp.

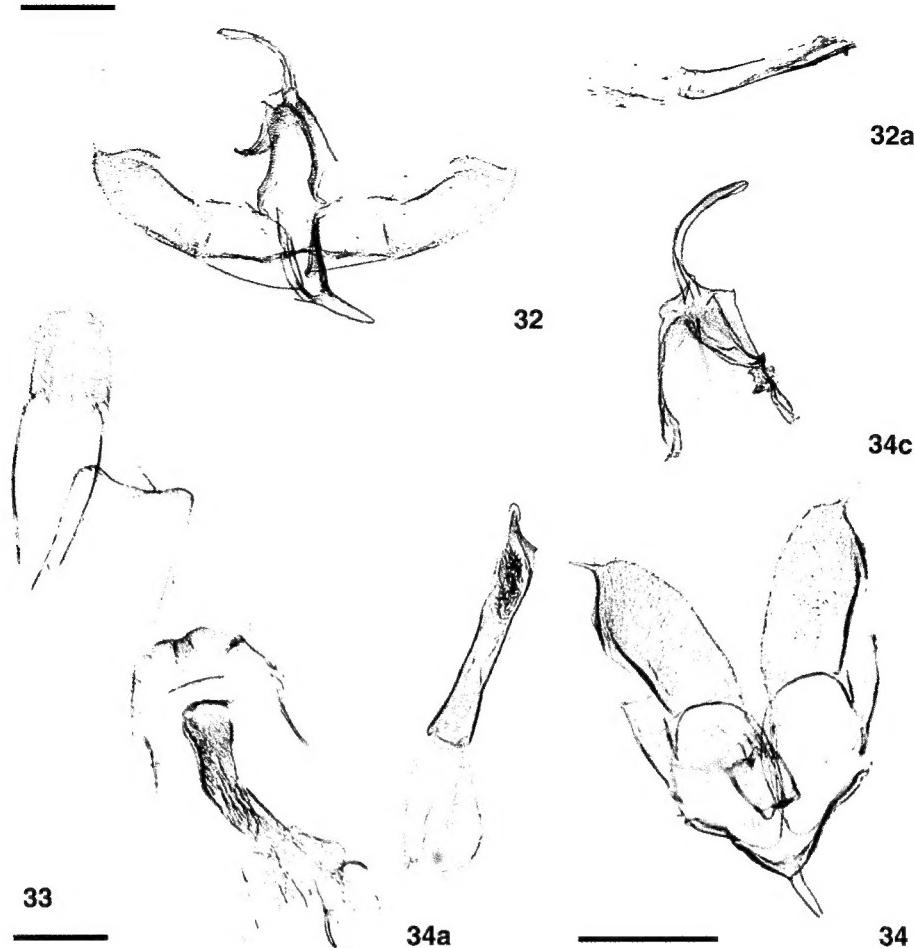


**Figs. 24~31.** Venations: 24. *A. lushanensis* n. sp.; 25. *A. pentagona* n. sp.; 26. *A. consimilis* n. sp.; 27. *A. mingchrica* n. sp.; 28. *A. latiuncusa* n. sp.; 29. *A. sichunica* n. sp.; 30. *A. leukosa* n. sp.; 31. *A. pyungyangeris* n. sp.

Lienhuachi Exp. For. Stn., 15 km SW Puli, 750 m, Kaohsiung Co., May 22~26, ? 1980 (DR Davis), USNM-92431; 1 (?), Shanpen For. Stnn., 750 m, Liukuei 10 km SE, Kaohsiung Co., 5~6 VII 1996 (KT Park et JS Lee), in CIS; 1 ♀, Lushan 30 km E Wu-she, 1000 m, 27~31 V 1980, Nantou Co. (DR Davis), USNM-87416. Japan; see Ueda, 1997: 115.

*Distribution.* Japan, China (new record), and Taiwan (new record).

*Remarks.* Due to the similarities of the superficial and genital characteristics between *A. tetragonopa* (Meyrick) and *A. imitativa* Ueda, they have often been confused and the separation of them has been difficult. It is reported from Taiwan and China for the first time.



**Figs. 32–34.** Male (a: aedeagus) and female genitalia: 32. *A. tetragonopa* (Meyrick), male; 33. ditto, female; 34. *A. imitativa* Ueda, male; 34c. ditto, uncus and tegumen. (Scale: 0.5 mm).

### 3. *Autosticha modicella* (Christoph, 1882) (Figs. 3, 35, 35a, 36)

*Ceratophora modicella* Christoph, 1882, Bull. Soc. imp. Nat. Moscou, 57(1): 28. TL: E. Siberia.

*Brachmia modicella*: Staudinger & Rebel, 1901: 157. Gaede, 1937: 541; Inoue, 1954: 72; Saito, 1969: 112; Issiki, 1971: 40; Moriuti, 1982: 287.

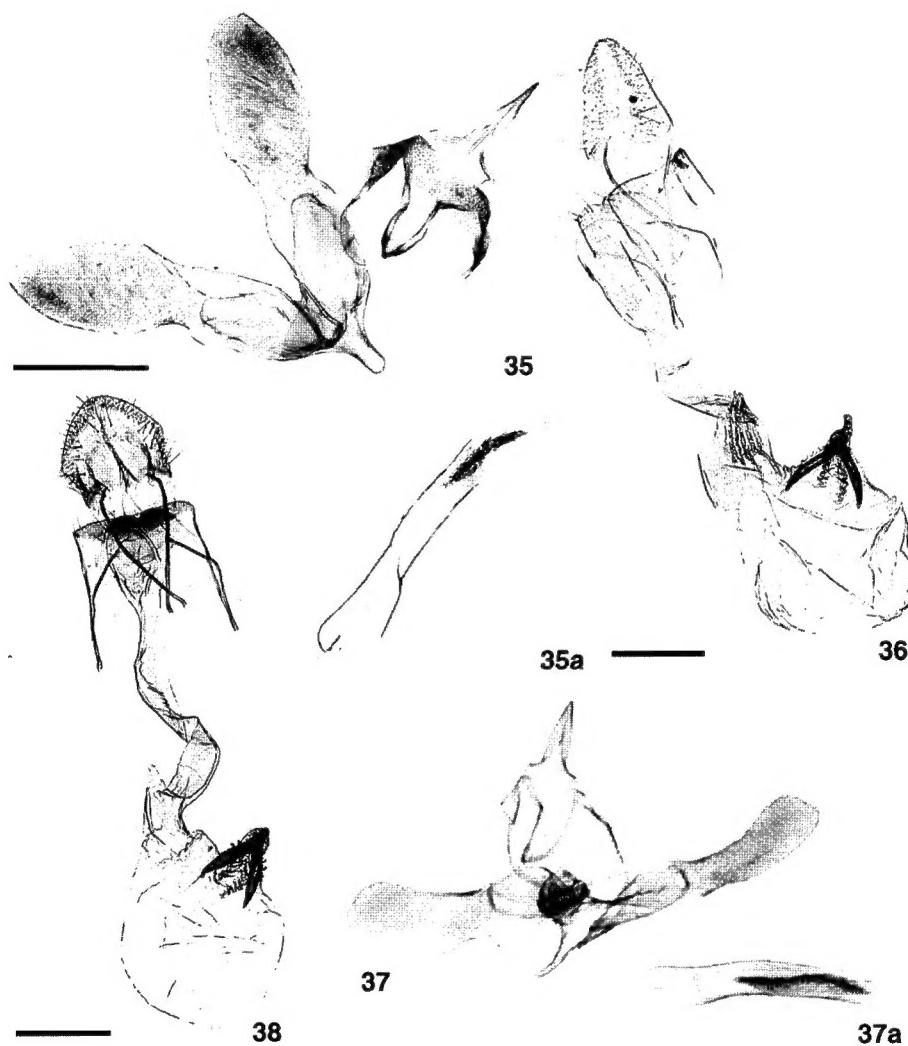
*Autosticha modicella*: Ueda, 1997: 115.

**Diagnosis.** Wingspan, 13–16 mm. Forewing ground color pale brownish orange, speckled evenly with dark scales; 1st discal stigma at middle, plical below it, and 2nd one at end of cell; four dots before apex along costa, five along termen; a fuscous diffusion before tornus on inner margin.

Male genitalia (Figs. 36, 36a). Also see Ueda, 1997: fig. 13. Uncus sharply pointed. Valva constricted before middle, then elliptical with obtuse apex. Juxta long, narrow, sclerotized laterally. Saccus relatively short. Aedeagus long, as long as valva, with a series of thin, spine-like cornuti.

Female genitalia (Fig. 37). Also see Ueda, 1997: fig. 17. Eighth sternite emarginate on distal margin medially. Ostium ovate with round distal margin. Ductus bursae long, about 1.5 times of corpus bursae; ductus seminalis arising from near conjunction with corpus bursae; signum inverted V-shaped, heavily sclerotized.

*Material examined.* China: 1 ♂, Jinpohu, Prov. Heilongjiang, 2 VII 1983; 2 ♂, Mt. Changbai-shan, Prov. Jilin, 5–6 VII 1974; 2 ♂, Huairou Co., Beijing City, 9 & 20 VII 1996; 1 ♂, Mt. Jigong-shan, Prov. Henan, 19 VIII 1957; 3 ♀, 2 ♂, Mt. Tianmu shan, Prov. Zhejiang, 15 IX 1989, gen. prep. no. W-89016, 30 VII 1972; 2 ♂, Mt. Lu-shan, Prov. Jiangxi, 7 VIII 1975, gen. prep. no. W-89087); 3 ♂, Zhangjiajie, Prov. Hunan, 12 X 1988, gen. prep. no. W92055, W-89370; 2 ♀, 1 ♂, Mt. Emei-shan, Prov. Sichuan, 23 V 1973 – above specimens



**Figs. 35–38.** Male (a: aedeagus) and female genitalia: 35. *A. modicella* (Christoph), male; 36. ditto, female; 37. *A. opaca* (Meyrick), male, copyright of the Trustees of the BMNH used with permission; 38. ditto, female. (Scale: 0.5 mm).

are in IZAS. Taiwan: 1 ♂, Lienhuachi Exp. For. Stnn., 15 km SW Puli, 750 m, Nantou Co., 22–26 V 1980 (DR Davis), gen. prep. no. USNM-92421; 1 ♂, Suisya, 20 III 1974 (S Issiki), in the USNM. Japan: 1 ♂, Tokai, Izu, Ito, 16 VI 1974 (S Issiki), in the USNM; commonly distributed from Hokkaido to Kyushu (see Ueda, 1997: 117). Korea: GG- Suweon, 1 ♂, 12 VI 1974, 1 ♂, 10 Sept. 1974, 1 ♀, 28 VIII 1974, 1 ♂, 26 VI 1977, 1 ex, 15 VII 1982, 1 ex, 11 VII 1983, 1 ♀, 5 VIII 1983, 3 exs, 16 VIII 1983, 1 ♂, 12 IX 1982, 1 ♂, 7 VII 1989; Gwangleung, 2 exs, 10 VII 1982; Mt. Soyo-san, 1 ♀, 3 XI 1992, 18 exs, VII 7, 1996, 8 exs, 5 VIII 1996, 4 exs, 7–8 IX 1996; Mt. Cheonggyae-san, 8 exs, 23–25 VII 1996, 1 ♂, 26 VII 1997; Is. Yongyu-do, Incheon, 2 exs, 28 VIII 1997; Is. Deokjeok-do, 2 exs, 24 VI 1997; Shiheung, 3 exs, 11 VII 1997; Mt. Cheonma-san, 1 ♂, 13 VII 1996; Seongnam, 1 ♂, 9 VII 1987; Mt. Hwaya-san, 5 exs, 18 VII 1997. GW- Mt. Jeombong-san, 1 ♀, 10 VIII 1992, 22 exs, 5–12 VIII 1997, 1 ♂, 11 VIII 1992, 6 exs, 30 VII 1991; Mt. Daeduk-san, 1 ♂, 11 VII 1997; Mt. Seolak-san, 4 exs, 28 VIII 1989; Mt. Nam-Seolak, 1 ♂, 12 VII 1997; Mt. Chiaksan, 1 ♀, 12 VII 1997, 1 ex, 10 VIII 1997; Sogeumgang, 4 exs, 8 VIII 1988; Yangyang, 1 ex, 10 VII 1987; Jeongseun, 7 exs, 30 VII 1991; Mt. Palbong-san, 4 exs, 5 VII 1990, gen. prep. no. CIS-4558, 4559; Mt. Samak-san, 1 ex, 19 VII 1989; Soyang-dam, Chuncheon, 1 ex, 3 VIII 1983, 1 ♀, 31 VII 1990; Chuncheon, 1 ex, 20 VI 1983, 2 ex, 3–5 VIII 1983, 1 ex, 11 VIII 1984, 1 ex, 7 VII 1987; Hwengseung, 2 exs, 2 VII 1997; Pyeongchang, 3 exs, 24 VI 1988. CN- Yesan, 1 ♂, 15 VI 1997. JB- Mt. Mireuk-san, Iksan, 5 exs, 23 VIII 1997; Muju, 1 ♂, 13 VIII 1975. JN- Mt. Jiri, 1 ♂, 14 VII 1976, 1 ex, 19 VII 1981, 2 ex, 23 VII 1983. GN- Kimhe, 1 ♀, 25 VII 1985. JJ- Mt. Halla-san, 4 exs, 5 VII 1986—collectors not indicated, in the CIS.

*Distribution.* Japan, Korea, Ussuri, China, and Taiwan

*Remark.* This is the most common species in Korea and Japan. In Korea, the moths appear from the middle of June to early November.

#### 4. *Autosticha opaca* (Meyrick) (Figs. 4, 37, 37a, 38)

*Brachmia opaca* Meyrick, 1927, Bull. Acad. Roum., 14(3): 9; Meyrick, 1935: 75.  
*Autosticha opaca*: Ueda, 1997: 125.

*Diagnosis.* This species cannot be distinguished from *A. modicella* (Christoph) and *A. truncicola* Ueda by the superficial appearance alone. However, the male and female genitalia are separable, as stated in the following description.

Male genitalia (Figs. 37, 37a). Based on a genital prep. no. 21883/KS, in the Natural History Museum, London. Uncus broad basally, almost parallel at basal 1/3 and gradually narrowed with pointed apex. Gnathos with strong lateral arms; apex pointed. Valva about 4 times of width, slightly expanded beyond half on ventral margin, almost quadrate; basal half rather narrow. Saccus relatively short. Aedeagus slender, slightly longer than valva, with a row of numerous spines.

Female genitalia (Fig. 38). The female genitalia very close to those of *A. modicella*, but can be distinguished from the latter by the followings: Ostium bursae elliptical with round caudal margin, longer and larger than that of *A. modicella*; ductus bursae broader and shorter.

*Material examined.* 1 ♀, labeled as “1). Kwanhsien, China, E. 7. 28, 2). *Brachmia opaca* Meyrick, E. Meyrick det. in Meyrick coll., 3). Meyrick coll. B.M. 1938–292” gen prep. USNM-87427/Park in USNM; labeled as “1). No. 56, Hangchaw, China, VII. 15. 1935, J.T. Chu coll., No. 56, 2). *Brachmia opaca* Meyrick, Meyrick det.”, gen. prep. no. USNM-10728/Clarke, in the USNM; 1 ♂, Mt. Qingcheng-shan, Prov. Sichuan, 13 VII 1980, gen. slide W-9915, in IZAS.

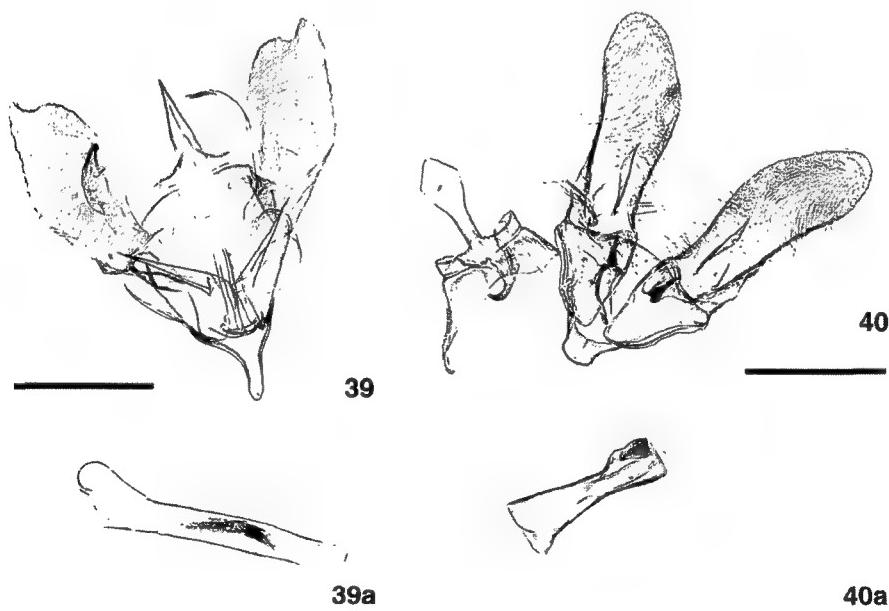
*Distribution.* China and Taiwan.

**Remarks.** This species was described from China, based on a single female, which is deposited in the Natural History Museum (BMNH). Its abdomen, however, is missing. Meyrick (1935) reported it from China (Tienmu shan, Lungtan, Hoengshan), Japan, and Taiwan. However, these specimens were probably mixed with *A. opaca* Meyrick, *A. truncicola* Ueda, or other related species, since they are difficult to separate solely by external characters. Some of the specimens preserved in the USNM, which Meyrick determined as “*opaca* Meyrick”, and most of the specimens from Japan and Taiwan that I examined for this study are determined as *truncicola* Ueda. Only male genitalia of a Chinese specimen (Figs. 37, 37a) in the Natural History Museum (BMNH), which was collected at the type locality of *opaca* Meyrick and identified to the latter, differs from those of *A. truncicola* Ueda. The female genitalia of the specimen in the USNM which was determined by Meyrick, with labels: 1) Kwanhsien, China, E.7. 28, 2) *Brachmia opaca* Meyrick, E. Meyrick det. in Meyrick coll., 3) Meyrick coll. B.M. 1938–292” gen prep. USNM-87427/Park, differ from those of *A. truncicola* Ueda, and it is considered to be *opaca* Meyrick.

##### 5. *Autosticha suwonensis* Park and Wu, sp. nov. (Figs. 5, 39, 39a)

**Diagnosis.** This species is superficially similar to *A. modicella* Christoph, but the male genitalic characteristics are quite different, with sickle-shaped process arising from the costa at basal 1/3.

**Description.** Male. Wingspan, 15 mm. Head light grayish yellow. Antenna yellowish brown, with dark brown annulations. Labial palpus light yellowish brown, 2nd segment suffused with dark brown outside. Thorax and tegula light yellowish brown. Legs yellowish brown, spurs dark brown, and tarsi irrorated with dark brown. Forewing brownish orange, pattern blackish brown: 1st discal stigma at middle of cell, plical below the 1st, and 2nd at end of cell; a series



**Figs. 39–40.** Male (a: aedeagus) genitalia: 39. *A. suwonensis* n. sp., male; 40. *A. pentagona* n. sp., male. (Scale: 0.5 mm).

of yellowish brown dots along posterior half of costal and inner margins and termen; fringes light yellowish brown. Hindwing pale grayish orange; fringes grayish yellow. Female is unknown.

Male genitalia (Figs. 39, 39a). Uncus lanceolate, with sharply pointed apex. Valva more or less quadrate, distal margin concave before apex; apex forming a short lobe, with falcate process on inner surface medially. Sacculus rather short. Aedeagus elongate, almost straight beyond globular basal part, with a series of spine-like cornuti in vesica.

*Type.* Holotype: male, Suwon, Korea, 12 VI 1974 (KT Park), gen. prep. no. CIS-760, deposited in the CIS.

*Distribution.* Korea.

*Etymology.* The specific name is derived from the collecting locality of the holotype.

#### 6. *Autosticha kyotensis* (Matsumura, 1931) (Figs. 6, 41, 41a, 42)

*Depressaria kyotensis* Matsumura, 1931: 1090 f. 2243; Moriuti, 1982: 287, pl. 13, fig. 43;

*Brachmia deodora* Clarke, 1962: 98, figs 2, 6

*Autosticha kyotensis*: Ueda, 1997: 120, figs 15, 21.

*Diagnosis.* Wingspan, 15–19 mm. This species is almost identical to the following new species in both the superficial and genitalic characteristics. It can be distinguished from the following species, however, by noting that the male genitalia resemble those of *A. carphodes* Meyrick, 1908, which was described from Kashi Hills. The shapes of the uncus and aedeagus, however, are separable each other.

Male genitalia (Figs. 41, 41a). Also see Ueda, 1997: fig. 15. Uncus similar to the following species, *lushanensis* n. sp. Gnathos less sclerotized at preapical portion; apex pointed. Valva broader than that of the latter; costa slightly oblique beyond 3/4. Aedeagus stouter than that of the latter.

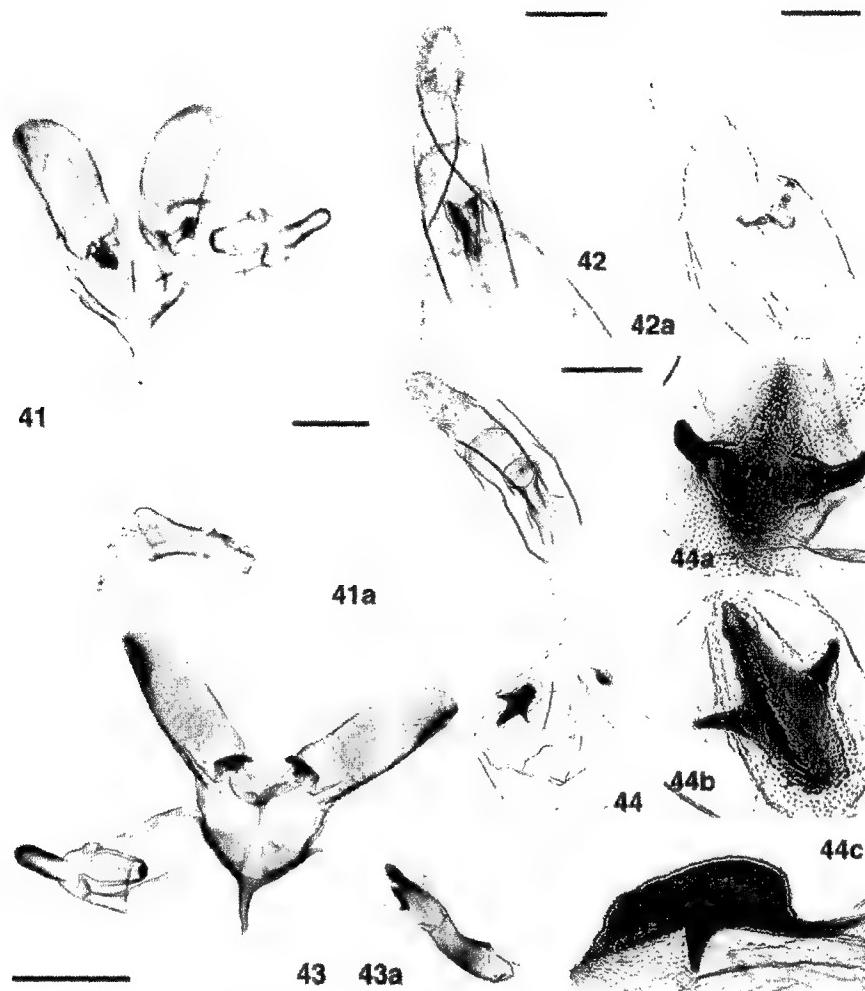
Female genitalia (Fig. 42). Also see Ueda, 1997: fig. 21. Caudal margin of 8th sternite slightly concave medially. Lamella postvaginalis rounded on caudal margin. Lamella antevaginalis cup-shaped, weakly sclerotized. Antrum about 1/6 length of ductus bursae, with a long, heavily sclerotized plate on left side and a shorter one on right side. Ductus bursae membranous, long; ductus seminalis arising from posterior part of ductus bursae. Corpus bursae semiovate; signum with long, band-like lateral arms.

*Material examined.* 1 ♂, Honshu, Kinki, Sakai, 2 VII 1957, larva in spun dead leaves on branch of *Cerasus deodora*, gen. prep. no. USNM-25941 (holotype of *deodora*); 1 ♂, 2 ♀, same locality and date as holotype, gen. prep. no. USNM-25942 (♀) and 25943 (♀); 1 ♂, labeled as "Honshu, Kinki, Sakai, 6 VII 1957 (T Kodama), larva in spun dead leaves on bark of branch of *Cerasus deodora*, gen. prep. no. USNM-10726/JFG Clarke, 23 VI 1958" (paratypes of *deodora*), above specimens are in the USNM.

*Distribution.* Japan.

#### 7. *Autosticha lushanensis* Park and Wu, sp. nov. (Figs. 7, 24, 43, 43a, 44)

*Diagnosis.* This species is very close to *A. kyotoensis* (Matsumura) in both the superficial and genitalic characteristics, but it can be separated by the shape of the valva, aedeagus, and signum in the male or the female genitalia: valva narrower and longer than that of *A. kyotensis*, almost parallel, whereas costa gently curved before apex in the latter; aedeagus slender, globular at base; corpus bursae with an ovate plate on opposite surface of signum, whereas the plate absent in *A. kyotoensis*; lateral arms of signum much longer and slender. It is also close to the Chinese species, *A. philodema* (Meyrick, 1938), which was described from



**Figs. 41–44.** Male (a: aedeagus) and female genitalia: 41. *A. kyotensis* (Matsumura), male; 42. ditto, female; 43. *A. lushanensis* n. sp., male; 44. ditto, female; 44a–c. ditto, magnification of variable signa (Scale: 0.5 mm).

Likiang, China gen. prep. no. BM-8947 and *A. carphodes* (Meyrick), **com. nov.** (from *Brachmia*) which was described from Kashi Hills. The male genitalia, however, are different: saccus longer, slender and aedeagus larger.

**Description.** Male and female. Wingspan, 17–19 mm. Head brownish fuscous, pale orange gray laterally. Antenna dark brown on pedicel; brownish orange with dark brown annulations on flagellum. Second segment of labial palpus densely covered with dark brown scales on outer surface; inner surface brownish orange, sparsely speckled with dark brown scales; 3rd segment about 2/3 of 2nd, sparsely speckled with dark brown scales all around. Thorax and tegula brownish fuscous. Forewing brownish fuscous, densely covered with dark brown scales; a short, dark streak at subbase centrally; costa fuscous at extreme base, almost straight, brownish orange: 1st discal stigma at middle, plical below the 1st, obliquely situated, and 2nd at end of cell; a series of brownish fuscous dots along posterior half of costa and termen;

tornus suffused with brownish scales; apex round; termen concave at end of  $M_1$ ; fringes light brown, with a narrow brownish subbasal and preapical lines, tipped with pale orange. Venation with  $R_3$  arising from near upper corner of cell;  $R_4$  and  $R_5$  stalked beyond middle;  $R_5$  to termen;  $M_2$  and  $M_3$  close at base;  $CuA_1$  and  $CuA_2$  stalked at basal 1/4. Hindwing gray; fringes concolorous;  $Rs$  and  $M_1$  stalked;  $M_3$  and  $CuA_1$  connate. Fore and midtibia pale grayish orange; Hindtibia clothed with long, shiny creamy white scales above and fuscous beneath distally.

Male genitalia (Figs. 43, 43a). Uncus slender, with almost parallel lateral margin, with round apex. Gnathos with weakly sclerotized lateral arms, heavily sclerotized at preapical portion; apex pointed. Valva elongate, almost quadrate with round distal margin; spatulate lobe before middle on inner surface, heavily sclerotized, ventrally curved. Saccus slender, relatively narrow. Aedeagus slender, shorter than valva, globular at basal 1/3, with a short, narrow plate at apical 1/4, bearing spine-like process.

Female genitalia (Fig. 44). Caudal margin of 8th sternite convex, whereas concave medially in *A. kyotoensis*. Lamella postvaginalis longer than that of *A. kyotoensis*; antrum relatively long, about 1/4 length of ductus bursae, with heavily sclerotized plates along lateral margins. Ductus bursae as long as corpus bursae. Corpus bursae ovate; a weakly sclerotized, ovate plate on opposite surface of signum, covered with numerous spicules on inner surface; signum plate semiovate, short, with heavily sclerotized lateral arms.

*Types.* Holotype: male, Lu-shan 30 km E Wu-she, ca. 1,000 m, Nantou Co., Taiwan, 27–31 V 1980 (DR Davis), gen. prep. no. USNM-92424. Paratypes: Taiwan—1♂, 1♀, same data as the holotype, gen. prep. no. USNM-92433; 1♂, Orchid Is., 4 km, SW Hungtou, 16–20 VII 1980 (DR Davis), gen. prep. no. USNM-92426; 1♀, Tungpu, Nantou Co., 1000 m, 27–31 V 1980 (DR Davis); 1♀, Kenting Park, Pingtung Co., 29–30 VIII 1983 (JB Heppner); 1♂, Kenting Park, Pingtung Co., 1–5 IX 1983 (JB Heppner), USNM-92438, above specimens in the USNM and FSCA; 2♂, 2♀, Ming-Chr, 1160 m, Ilan Co., 9–10 VII 1996 (KT Park & HK Lee); 2♂, Tien-Chi, Kaohsiung Co., 1 VII 1996 (KT Park & HK Lee); 2♂, Taroko Nat. Park, Hualien Co., 16–17 X 2000 (KT Park, MS Ko), in the CIS. China—2♂, 1♀, Mt. Lushan, Prov. Jiangxi, 31 VII 1975, same locality, 7 VIII 1975, gen. prep. no. W-89105; 1♂, Nanchang, Prov. Jiangxi, 25 VII 1978, gen. prep. no. W-92083; 1♀, 1♂, Mt. Emei, Prov. Sichuan, 18–20 VII 1980; 1♀, Jianfengling, Prov. Hainan, 19–21 V 1978, gen. prep. no. W-9912; 1♂, Prov., Guangdong, 18 IV 1978, gen. prep. no. W-89212; 1♂, Prov. Zhejiang, 15 IX 1989, gen. prep. no. W-89014; 2♂, 1♀, Beijing, Huairou Co., 8 VII 1996, gen. slide W-9935; 3♂, Guangzhou, Prov. Guangdong, 18–24, IV 1978; 1♂, Mt. Tianmushan, Prov. Zhejiang, 15 IX 1989, in the IZAS. The holotype is deposited in the USNM and paratypes are in the above indicated collections.

*Distribution.* China and Taiwan.

*Etymology.* The specific name is derived from the collecting locality of the holotype.

#### 8. *Autosticha pentagona* Park and Wu, sp. nov. (Figs. 8, 25, 40, 40a)

*Diagnosis.* This species is one of the small sized species of the genus. The wing pattern is similar to that of *A. modicella*, but the male genital characteristic is close to *A. truncicola*, especially in the shape of uncus.

*Description.* Male. Wingspan: 11.5–12 mm. Head pale grayish orange, scales tipped with brown. Antenna pale brownish orange; pedicel speckled with brownish scales; flagellum with dark brown annulations. Second segment of labial palpus creamy white to pale orange, fuscous scales sparsely scattered on surface and suffused with brown scales preapically; 3rd segment shorter than 2nd. Thorax and tegula pale grayish orange, speckled with brownish

scales. Forewing ground color pale grayish orange, sparsely scattered with fuscous scales, more below costa; 3–4 short, dark streaks at subbasal area; costa almost straight, brownish orange; 1st discal stigma at middle, plical below the 1st, and 2nd one at end of cell; a series of brownish fuscous dots along preapical part of costa and termen; tornus suffused with brownish scales; fringes concolorous, tipped with brown. Venation with  $R_3$  arising from upper corner of cell;  $R_4$  and  $R_5$  stalked near basal 2/3;  $R_5$  to termen;  $M_2$  and  $M_3$  very close at base;  $CuA_1$  and  $CuA_2$  stalked at basal 1/8. Hindwing pale orange gray; fringes concolorous;  $Rs$  and  $M_1$  connate;  $M_3$  and  $CuA_1$  connate. Fore- and midtibia pale grayish orange; Hindtibia clothed with shiny creamy white scales. Female is unknown.

Male genitalia (Figs. 40, 40a): Uncus more or less pentagon, with long neck; tegumen short and wide. Gnathos narrow, slightly shorter than uncus, with pointed apex. Valva elongate, about 5 times as long as width; inner margin slightly constricted before middle, convex near 2/3; apex rounded; a narrowed weakly scleritized flap medially on inner surface. Saccus very short, almost quadrate. Aedeagus stout, about 1/2 length of valva, constricted at middle; apex blunt; cornutus absent.

*Types.* Holotype: male, Botanical garden, Prov. Guangdong, 21 IV 1978, gen. prep. no. W-9940. Paratype: 1 ♂, same locality as the holotype, 24 IV 1978, gen. prep. no. CIS-4565. The holotype is deposited in the IZAS and a male paratype in the CIS.

*Distribution.* China.

*Etymology.* The specific name is derived from the shape of uncus.

#### 9. *Autosticha truncicola* Ueda, 1997 (Figs. 9, 45, 45a, 46)

*Autosticha truncicola* Ueda, 1997, Jpn. J. Ent. 65(1): 122, figs. 16a–b.

*Diagnosis.* Wingsapn, 16–18 mm. This species superficially resembles *A. opaca* (Meyrick) as well as the following new species, but can be separated by the male and female genitalic characteristics.

Male genitalia (Figs. 45, 45a). Also see Ueda, 1997: figs. 16a–b. Uncus spatulate, narrowed at base, forming a neck. Gnathos with blunt apex. Valva elongate, with broad, short subtriangular process on costa medially; sacculus with a triangular lobe near middle on inner surface. Saccus relatively broad and long. Aedeagus longer than valva, with two small denticles preapically and with a long, needle-shaped process at apex; cornuti composed of numerous spines on a row.

Female genitalia (Fig. 46). Also see Ueda, 1997: fig. 22. Hardly distinguishable by female genitalic characteristics from those of the following new species.

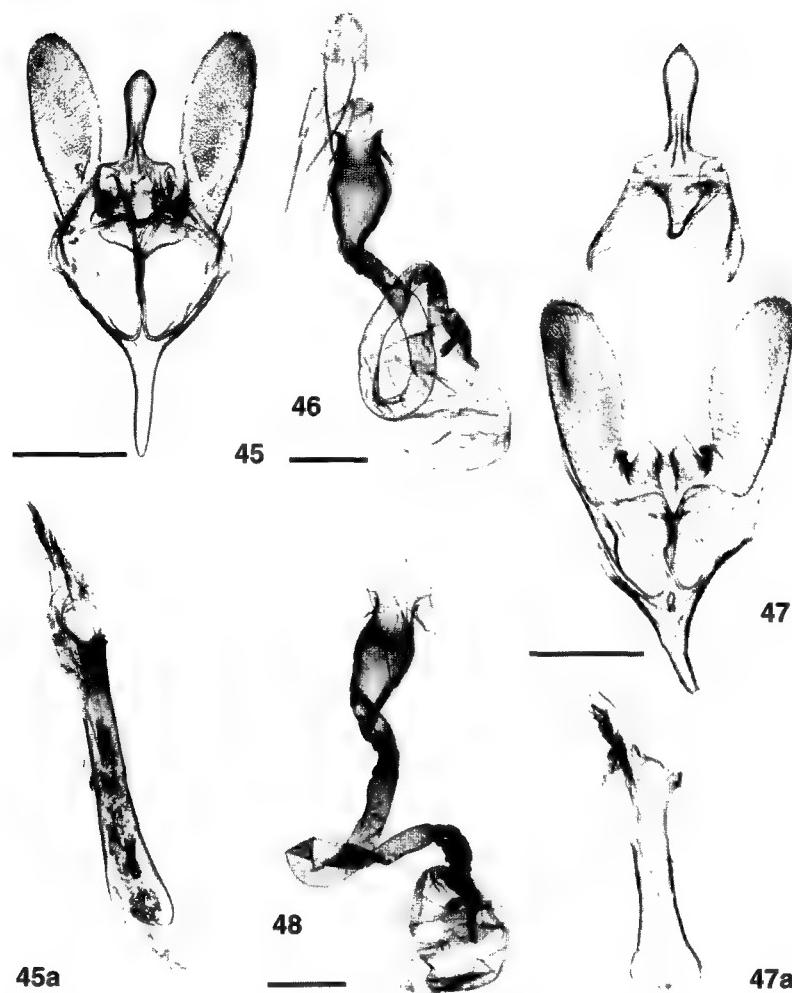
*Material examined.* China: 1 ♀, Huairou Co., Beijing City, 9 VII 1996, gen. prep. no. W-9937; 1 ♀, Beijing, 9 VII 1996, gen. prep. no. W-9937, in the IZAS. Korea: 2 ♂, 3 ♀, Mt. Inwang-san, SE, 23 VII 1988 (SY Sim), gen. prep. no. CIS-4867, 4918 (♂); 1 ♀, Sinsido, JB, 26 VII 1980 (KT Park); 1 ♀, Mt. Mireuk-san, Iksan, JB, 23 VIII 1997 (BW Lee & NH Ahn), gen. prep. no. CIS-4892 (♀); 1 ♂, 1 ♀, Mt. Jiri, JN, 19 VII 1981 (KT Park), gen. prep. no. CIS-4919, in the CIS. Japan (Honshu, Kyushu): See Ueda (1977: 124).

*Distribution.* Japan, Korea (new record), and China (new record).

#### 10. *Autosticha consimilis* Park and Wu, sp. nov. (Figs. 10, 26, 47, 47a, 48)

*Diagnosis.* This species is hardly distinguishable from the preceding species by superficial characters, but it can be separated from the latter by the male genitalic characteristics, especially in the shorter aedeagus.

*Description.* Male and female. Wingsapn, 16–17 mm. Head pale brownish orange, speckled



**Figs. 45–48.** Male (a: aedeagus) and female genitalia: 45. *A. truncicola* Ueda, male; 46. ditto, female; 47. *A. consimilis* n. sp., male; 48. ditto, female. (Scale: 0.5 mm).

with dark scales. Antenna with dark brown annulations. Second segment of labial palpus stout, brown, speckling with dark fuscous scales on outer surface; 3rd segment slender, as long as 2nd, grayish orange with several dark brown dots irregularly. Forewing relatively narrow; ground color yellowish brown, speckled with dark scales evenly; fuscous scales along costa before basal 1/3 and grayish orange beyond it; small, dark brown streak above R vein at subbasal area; three dark fuscous discal stigmata well presented: 1st at middle of cell, plical below it, and 2nd at end of cell; 3–4 marginal dots on apical 1/4 of costa and 5–6 dots along termen; apex round; fringes concolorous. Venation  $R_3$  and  $R_{4+5}$  close at base;  $R_4$  and  $R_5$  stalked near basal 2/3;  $M_2$  close to  $M_3$  at base;  $CuA_1$  and  $CuA_2$  stalked from before basal 1/4 and running very close to each other. Hindwing pale grayish brown; apex somewhat acute; termen sinuate;  $Rs$  and  $M_1$  separated from near base; fringes concolorous. Hindtibia clothed with pale brownish orange, hair-like scales.

Male genitalia (Fig. 47, 47a). Separable from those of the preceding species by the followings: uncus larger, more sharply pointed; lobe on inner surface of valva trapezoidal, with pointed apex, whereas in *truncicola* triangular with obtuse apex; saccus broader at base and much shorter, with a small digitate lobe medially on caudal margin; aedeagus shorter than valva, about 3/4 length of *truncicola*, globular at base, lack of needle-shaped process apically; cornuti consist of stronger spines.

Female genitalia (Fig. 48). Eighth sternite convex medially, with round caudal margin. Lamella antevaginalis quadrate, with heavily sclerotized, triangular plates along lateral sides of antrum. Antrum jar-shaped, heavily sclerotized, inflated medially. Ductus bursae long, coiled once; ductus seminalis arising from the posterior part end of ductus bursae. Signum positioned at posterior part, heavily sclerotized, with leaf-shaped processes medially.

**Types.** Holotype: male, Kukuan, 720 m, Taroko Natn. Park, Taichung Co., Taiwan, 8 VII 1996 (KT Park, JS Lee), gen. prep. no. 4917/Park. Paratypes: 2♀, same locality as the holotype; 1♀, Lienhuachi Exp. For. Stnn., 15 km SW Puli, 750 m, Nantou Co., 22–26 V 1980 (DR Davis), gen. prep. no. USNM-92436; 1♂, Shanpen For. Stn. 750 m, Liukuei, 10 km, Kaohsiung Co., 5–6 VII 1996 (KT Park & HK Lee). The holotype and paratypes are deposited in the CIS and a female paratype in the UNM.

**Distribution.** Taiwan.

**Etymology.** The specific name is derived from *L. similis* (= like, resembling).

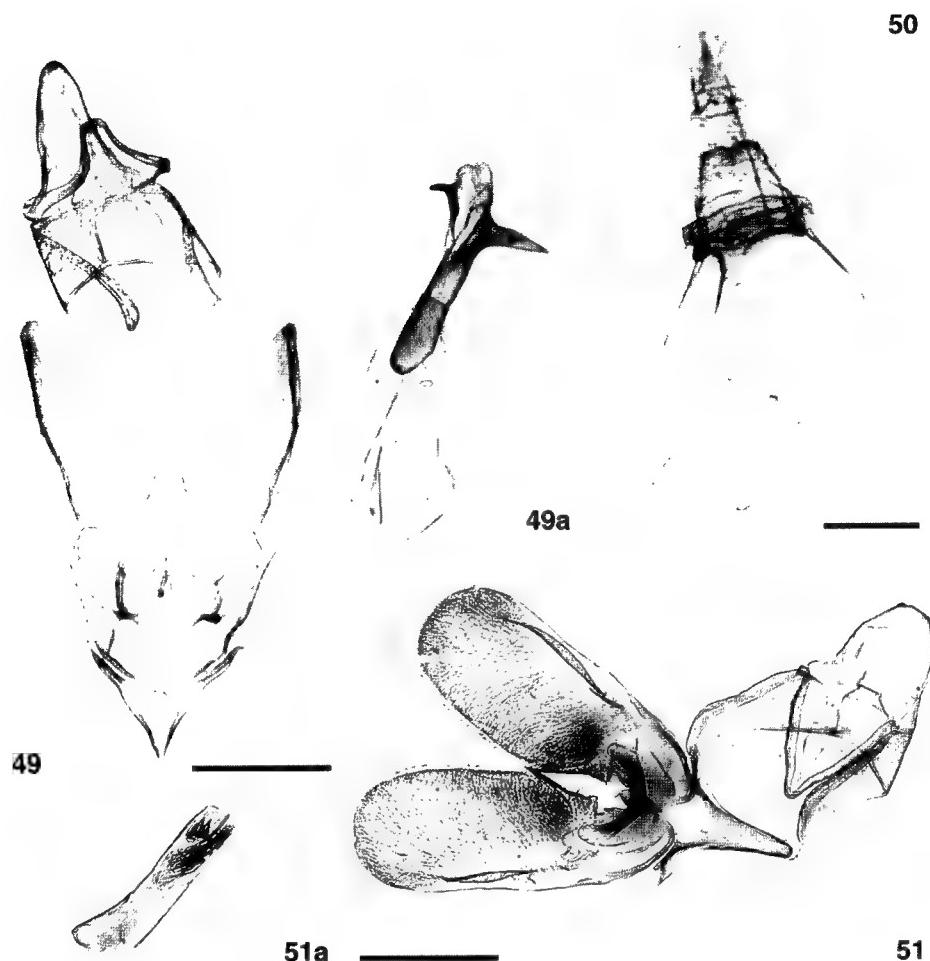
### 11. *Autosticha mingchrica* Park and Wu, sp. nov. (Figs. 11, 27, 49, 49a, 50)

**Diagnosis.** This species is distinguished from the previously known species by the dark fuscous ground color of the forewing and the male genitalic characteristics.

**Description.** Male and female. Wingspan, 16–19 mm. Head dark fuscous, brownish orange laterally. Antenna dark fuscous; pedicel brownish orange at apex; flagellum brownish orange with dark brown annulations. Second segment of labial palpus densely covered with dark brown scales on outer surface; brownish orange on inner surface with speckled dark brown scales preapically; apex white; 3rd segment shorter than 2nd, speckled with dark brown scales at basal 2/3 on outer surface. Thorax and tegula dark fuscous. Forewing densely covered with dark fuscous scales; a small, brownish orange spot at base; costa fuscous at extreme base, almost straight; discal stigmata dark brown, 1st at middle, plical below the 1st, and 2nd largest at end of cell; a series of brownish fuscous marginal dots, which are sometimes invisible; apex round; termen oblique, not sinuate; fringes brownish fuscous, with grayish orange basal line. Venation with  $R_3$  arising from near upper corner of cell;  $R_4$  and  $R_5$  stalked near middle;  $R_5$  to apex;  $M_2$  and  $M_3$  close at base;  $CuA_1$  and  $CuA_2$  stalked from near base. Hindwing gray; fringes concolorous;  $Rs$  and  $M_1$  stalked at near base;  $M_3$  and  $CuA_1$  connate. Fore and midtibia dark fuscous outwardly; hindtibia pale brownish orange before midspur outwardly and dark fuscous beyond it, with pale orange apex.

Male genitalia (Figs. 49, 49a): Uncus broad at base, with round apex. Lateral arms of gnathos well sclerotized; apex blunt. Valva elongate, about 3 times as long as width; inner margin gradually oblique beyond middle, somewhat narrowed at apex; ventral margin constricted beyond middle and heavily sclerotized along margin beyond half. Juxta broad, width about twice the length; distal margin straight; anterior margin concave at middle with short lateral lobes. Saccus short, narrowed towards apex. Aedeagus slender, about 2/3 length of valva, with large spine-like process preapically; cornutus pickax-shaped.

Female genitalia (Fig. 50): Apophysis posterioris about 3/5 length of apophysis anterioris. Eighth sternite emarginate at middle. Ostium trapezoidal, heavily sclerotized, asymmetrical, with sinuate lateral margins. Lamella postvaginalis quadrate, large, heavily sclerotized.



**Figs. 49–51.** Male (a: aedeagus) and female genitalia: 49. *A. mingchrica* n. sp., male; 50. ditto, female; 51. *A. latiuncusa* n. sp., male. (Scale: 0.5 mm)

Antrum slender, weakly sclerotized, extended to 4/5 length of ductus bursae. Ductus bursae as long as corpus bursae; ductus seminalis arising from distal 1/3. Corpus bursae ovate; signum small, ovate, somewhat asteroid, positioned near conjunction of ductus bursae.

**Types.** Holotype: male, Ming-Chr, 1160 m, Ilan Co., Taiwan, 9–10 VII 1996 (KT Park & JS Lee), gen. prep. no. CIS-4912. Paratypes: 1 ♂, 7 ♀, same data as the holotype, gen. prep. no. CIS-4914, 4932. Types to CIS on indefinite loan from Taiwan.

**Distribution.** Taiwan.

**Etymology.** The specific name is derived from the collecting locality of the holotype.

#### 12. *Autosticha latiuncusa* Park and Wu, sp. nov. (Figs. 12, 28, 51, 51a, 52)

**Diagnosis.** This species is superficially close to *A. consimilis* sp. nov., but can be distinguished from the latter by the followings: Forewing ground color paler, no fuscous scales

along costa at basal 1/3, plical stigma obliquely placed before the 1st one anteriorly, and CuA<sub>1</sub> and CuA<sub>2</sub> separated. The male genitalia are quite different with a broad, short uncus.

*Description.* Wingspan, 17–18 mm. Head pale grayish orange. Antenna pale grayish orange, with pale brown annulations. Second segment of labial palpus brownish orange, with brownish scales on outer surface; 3rd segment slender, shorter than 2nd, pale grayish orange. Thorax and tegula pale grayish orange, speckled sparsely with fuscous scales. Forewing relatively narrow, ground color pale grayish orange, sparsely speckled with dark scales; costa gently arched near basal 1/3; 1st stigma at middle of cell, plical obliquely situated before 1st, and 3rd at end of cell; 3–4 marginal dots on apical 1/4 of costa and 5–6 dots along termen; apex more or less acute; fringes concolorous. Venation R<sub>3</sub> and R<sub>4+5</sub> close at base; R<sub>4</sub> and R<sub>5</sub> stalked near middle; R<sub>5</sub> to apex; CuA<sub>1</sub> and CuA<sub>2</sub> separated; distance between M<sub>3</sub> and CuA<sub>1</sub> equal to that of CuA<sub>1</sub> and CuA<sub>2</sub> at base; Hindwing pale gray; apex obtuse; termen slightly sinuate; fringes concolorous; Rs and M<sub>1</sub> separated at basal 1/5; M<sub>3</sub> and CuA<sub>1</sub> shortly stalked. Hindtibia clothed with pale brownish orange hair-like scales.

Male genitalia (Figs. 51, 51a). Uncus very broad, short; caudal margin almost straight, but with small denticles at middle and both sides. Gnathos with blunt apex. Valva elongate, almost parallel beyond 2/5, with weakly sclerotized long, plical plate at inner side of ventral margin; distal margin gently rounded. Juxta deeply concave on distal margin. Saccus relatively broad, as long as uncus. Aedeagus about 2/3 length of valva; cornuti consist of a series of 3–4 small spines and 6–7 long spines.

Female genitalia (Fig. 52). Apophysis posterioris about 2/3 length of apophysis anterioris. Eighth sternite almost straight on caudal margin. Lamella postvaginalis airship-like. Antrum weakly sclerotized, 2/5 length of ductus bursae, thence expanded and slightly sclerotized on surface. Corpus bursae large, as long as ductus bursae; signum plate with horn-shaped, heavily sclerotized lateral arms, positioned at conjunction with ductus bursae.

*Types.* Holotype: male, Mt. Qingcheng-shan, Prov. Sichuan, 19 V 1979. gen. prep. no. CIS-4567. Paratypes: 2♀, 4♂, same data as the holotype, gen slide no. CIS-4933, W-9944 (♂), 9945 (♀), 9952 (♂). The holotype is deposited in the ZIAS and a male paratype in the CIS.

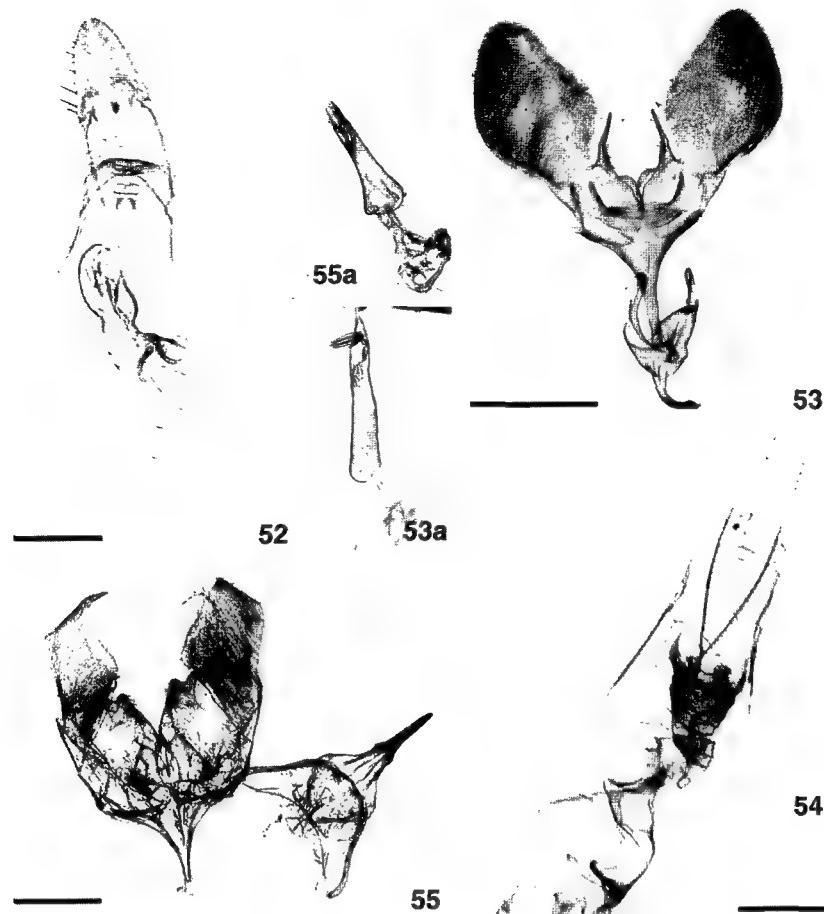
*Distribution.* China.

*Etymology.* The specific name is derived from *G. latus* (= broad, wide), referring to the broad uncus.

### 13. *Autosticha taiwana* Park and Wu, sp. nov. (Figs. 13, 53, 53a, 54)

*Diagnosis.* This species is superficially similar to *A. latiuncusa*, but can be distinguished by the forewing with plical stigma vertically situated below the 1st one.

*Description.* Wingspan, 17–18 mm. Head pale grayish orange. Antenna pale grayish orange, with pale brown annulations. Second segment of labial palpus brownish orange, with brownish scales on outer surface, paler on inner surface; 3rd segment slender, as long as 2nd. Thorax and tegula light brown. Forewing elongate, narrow; ground color pale brownish orange, speckled with dark fuscous scales, more dense beyond middle; costa almost straight; 1st stigma at middle of cell, plical below the 1st, and 3rd at end of cell, larger than 1st; 3–4 marginal dots on apical 1/4 of costa and 5–6 dots along termen; apex more or less rounded; termen not sinuate; fringes concolorous. Venation R<sub>4</sub> and R<sub>5</sub> stalked beyond middle; R<sub>5</sub> to apex; M<sub>2</sub> close to M<sub>3</sub> at base; CuA<sub>1</sub> and CuA<sub>2</sub> separated; distance between M<sub>3</sub> and CuA<sub>1</sub> equal to CuA<sub>1</sub> and CuA<sub>2</sub> at base. Hindwing pale gray; apex obtuse; termen slightly sinuate; fringes concolorous; Rs and M<sub>1</sub> separated at basal 1/4; M<sub>3</sub> and CuA<sub>1</sub> connate. Hindtibia clothed with pale orange gray hair-like scales above and beneath.



**Figs. 52–55.** Male (a: aedeagus) and female genitalia: 52. *A. latiuncusa* n. sp., female; 53. *A. taiwana* n. sp.; 54. ditto, female; 55. *A. sinica* n. sp., male. (Scale: 0.5 mm)

Male genitalia (Figs. 53, 53a). Uncus bent ventrally, heavily sclerotized, with pointed apex. Gnathos relatively short, with a heavily sclerotized apical part; apex obtuse. Tegumen rather small. Valva more or less trapezoidal in distal part, densely setose on inner surface, with blunt apex; a heavily sclerotized, long, narrow, free lobe at 1/3 of costa. Juxta wide and short, with heavily sclerotized, digitate process laterally. Saccus long, slender. Aedeagus slender, tapered with pointed apex, about 2/3 length of valva; cornuti consist of a bundle of 5–6 bars.

Female genitalia (Fig. 54). Eighth sternite convex on caudal margin medially. Antrum cup-shaped, weakly sclerotized, 1/5 length of ductus bursae. Ductus bursae expanded beyond middle. Corpus bursae large, longer than ductus bursae; signum plate with horn-shaped, heavily sclerotized lateral arms, positioned at distal 2/3.

**Types.** Holotype: male, Lushan, ca. 30 km W Wu-she, 1000 m, Nantou Co., Taiwan, 27–31 V 1980 (DR Davis), gen. prep. no. USNM-92425. Paratype: 1♀, 1–2 km W Meishan, ca. 870 m, Kao Hsiung Co., Taiwan, 29 VI– 2 VII 1980 (DR Davis), gen. prep. no. USNM-92437. The types are deposited in the USNM.

**Distribution.** Taiwan.

*Etymology.* The specific name is derived from the collecting locality of the holotype.

**14. *Autosticha sinica* Park and Wu, sp. nov. (Figs. 14, 55, 55a)**

*Diagnosis.* This species is superficially close to *A. truncicola* Ueda and *A. consimilis* sp. nov., but differs from the latter by the male genitalic characteristics.

*Description.* Male and female. Wingspan, 17–18 mm. Head yellowish brown, speckled with dark scales. Antenna pale brownish orange, with dark brown annulations. Second segment of labial palpus stout, dark brown on outer surface, pale brownish orange speckled with fuscous scales on inner surface; 3rd segment slender, as long as 2nd, pale brownish orange with several dark brown dots irregular. Forewing relatively broad, broader toward distally; densely, but evenly covered with pale brownish orange scales; two large spots at subbasal area, one on R vein and the other on inner margin; discal stigmata well presented, blackish: 1st at middle, plical below the 1st, and 2nd largest, at end of cell; marginal dots along costa and termen, not easily seen; apex obtuse; termen sinuate; fringes concolorous. Venation R<sub>3</sub> and R<sub>4+5</sub> close at base; R<sub>4</sub> and R<sub>5</sub> stalked at basal 2/3; M<sub>2</sub> close to M<sub>3</sub> at base; CuA<sub>1</sub> and CuA<sub>2</sub> stalked before basal 1/4. Hindwing pale brownish gray; apex obtuse; termen sinuate; Rs and M<sub>1</sub> separated near base; M<sub>3</sub> and CuA<sub>1</sub> shortly stalked; fringes concolorous. Hindtibia clothed with pale brownish orange scales all around. Female is unknown.

Male genitalia (Figs. 55, 55a): Uncus long, divided into two parts; basal 2/5 broad and apical 3/5 tapered, heavily sclerotized, with a pointed apex. Gnathos broad, short, with a blunt apex. Valva broad, with sharply pointed process at apex; costa deeply emarginate near middle, with a curved process before it and a short lobe basally. Juxta double heart-shaped. Saccus moderate, with a rounded apex. Aedeagus relatively short, tapered, without sclerotized cornuti.

*Types.* Holotype: male, Mt. Qingchengshan, Prov. Sichuan, 28 VII 1980, gen. prep. no. W-9953. Paratype: 1 ♂, same data as the holotype, gen. prep. no. W-9954. The holotype is deposited in the IZAS and the paratype in the CIS.

*Distribution.* China.

**15. *Autosticha sichuanica* Park and Wu, sp. nov. (Figs. 15, 29, 56, 56a, 57)**

*Diagnosis.* This species is distinguished from the common species of the genus by the creamy white ground color of the forewing with several scattered, dark brown dots. It is superficially close to *A. pachysticta* (Meyrick), but can be distinguished from the latter by the distally broader forewing, whereas relatively narrow in the latter.

*Description.* Wingspan, 14–15 mm. Head creamy white, irrorated with dark scales. Antenna pale grayish orange, with brown annulations. Second segment of labial palpus stout, creamy white, with broad black band before middle and the other narrow one preapically; apex creamy white; 3rd segment shorter than 2nd, creamy white, with black band near base and apex. Thorax and tegula creamy white, irrorated with dark scales. Forewing ground color creamy white, speckled randomly with black scales; three large black dots along subbasal line; similar three dots near middle, 3/4 on costa and at middle of termen; 1st discal stigma at middle of cell, plical below the 1st, and 2nd largest at end of cell; three pairs of marginal dots before apex and several dots along termen; brownish suffusion before tornus; apex obtuse; termen oblique; fringes creamy white, with 5–6 brownish spots from preapical margin to tornus. Venation with R<sub>3</sub> and R<sub>4</sub> approximate at base; R<sub>4</sub> and R<sub>5</sub> coincident; distance R<sub>4</sub> and M<sub>1</sub> further than M<sub>1</sub> and M<sub>2+3</sub>; M<sub>2</sub> and M<sub>3</sub> coincident; M<sub>2+3</sub> and CuA<sub>1</sub> close at base; CuA<sub>1</sub> and CuA<sub>2</sub> separated. Hindwing pale gray; apex obtuse; termen slightly sinuate; Rs and M<sub>1</sub>

connate;  $M_3$  and  $CuA_1$  shortly stalked; fringes concolorous. Hindtibia clothed with pale brownish orange hair-like scales all around.

Male genitalia (Figs. 56, 56a): Uncus slender, with pointed apex. Tegumen moderate. Gnathos relatively large, longer than uncus, with pointed apex. Valva broad, almost rectangular, broader posteriorly. Juxta shield-shaped. Saccus long, longer than 1/2 length of valva. Aedeagus globular at base, tapered to apex.

Female genitalia (Fig. 57): Apophysis posterioris about 1/2 length of apophysis anterioris. Eighth sternite convex medially on caudal margin. Lamella postvaginalis emarginate medially and roundly convex on both sides of the caudal margin. Antrum sclerotized along left surface, about 4/5 length of ductus bursae. Ductus bursae narrow, shorter than corpus bursae; ductus seminalis arising near conjunction with corpus bursae. Corpus bursae oval; signum with serrated arms laterally.

*Type.* Holotype: male, Mt. Qingcheng shan, Prov. Sichuan, 26 VII 1980 (YQ Liu), gen. prep. no. CIS-4563. Paratypes: 1♀, 1♂ same data as the holotype, gen. prep. no. W-9922, 9923; 1♂, same locality, 20 VII 1980, gen. prep. no. W-89210; 1♀, same locality, 25 VII 1980. 1♂, Dayu, Prov. Jiangxi, 16, 1977, gen. prep. no. CIS-4568/Park; 1♂, Feng Xin, 20 VII 1975, gen. prep. no. W-94023; 1♀, Xing Guo, 21 VII 1976 (YQ Liu); 1♂, 1♀, Da Yu, 13 VII 1977; 1♀, Mt. Tianchi shan, Prov. Hainan, 17 IV 1980, gen. prep. no. W-9926 (♂); 1♀, same locality, 10 IV 1980, gen. prep. no. W-9925; 1♀, 20 III 1980. 2♂, 1♀, Mt. Wuyi shan, Prov. Fujian, 1-4 VIII 1988, gen. prep. no. W-9919 (♂), W-9918 (♀); 1♂, Mt. Meihua shan, 21 VII 1988, gen. prep. no. W-89211. All types are deposited in the IZAS, excepting a male and female paratypes in the CIS.

*Distribution.* China.

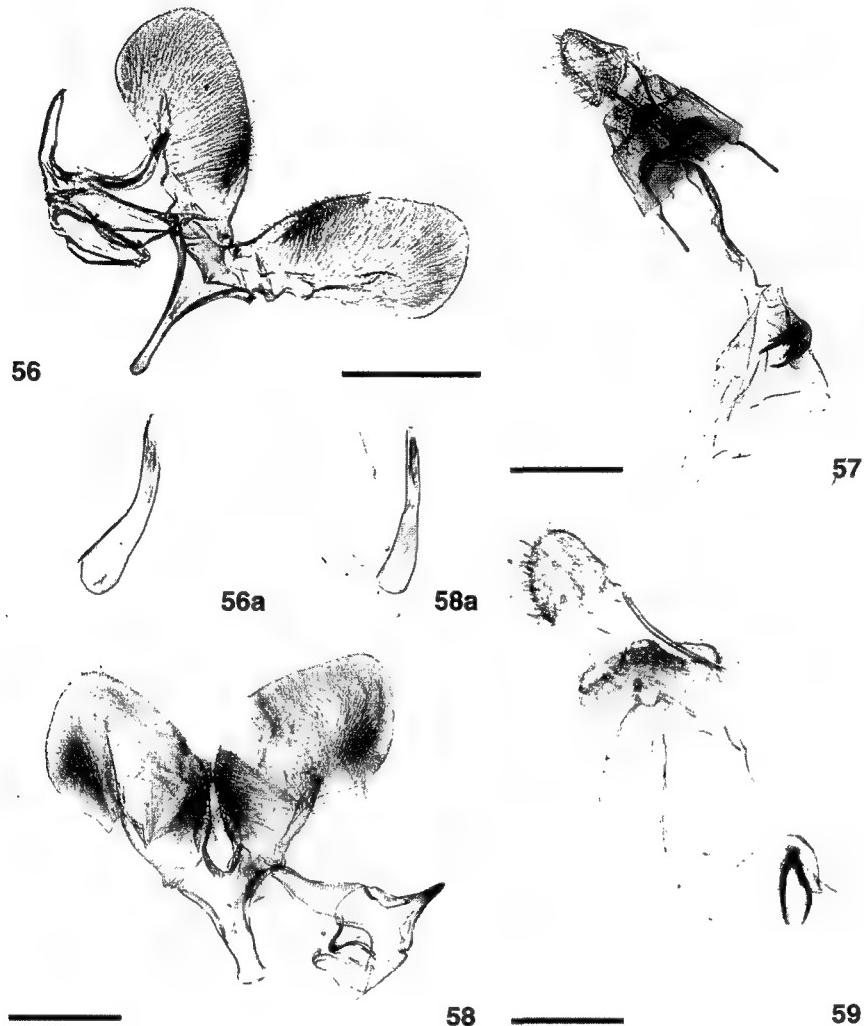
*Etymology.* The specific name is derived from the collecting locality of the holotype.

#### 16. *Autosticha cuspidata* Park and Wu, sp. nov. (Figs. 16, 58, 58a, 59)

*Diagnosis.* This species is superficially close to the preceding new species, *A. sichuanica* sp. nov., but differs from the latter by its smaller size, and forewing venation with a cross vein on  $R_3$ . The genitalic characteristics are also separable: male genitalia have a more slender uncus and shorter saccus, and the female genitalia have a fighter plane-like signum.

*Description.* Male and female. Wingspan, 11-12 mm. Head creamy white, shiny, sparsely irrorated with black scales. Antenna pale grayish orange, with fuscous annulations; pedicel suffused with black scales. Labial palpus creamy white; 2nd segment with broad brownish fuscous band on basal 3/5 and narrow one preapically; 3rd segment shorter than 2nd, with dark brown band at basal 1/3 and apex. Thorax and tegula creamy white. Forewing ground color creamy white, sparsely scattered with dark fuscous scales; two large black dots at subbasal area; 1st discal stigma at middle, plical below it, 2nd at end of cell; costa with two black dots at middle and three smaller dots beyond it along costal margin; 3-4 similar dots along termen; a brownish suffusion before tornus; fringes creamy white, with light brown row medially;  $R_3$  rudimentary at basal half, with a cross vein connected  $R_2$  beyond middle;  $R_4$  and  $R_5$  coincident;  $R_4$  to costa;  $M_1$  closer to  $R_4$  than to  $M_{2+3}$ ;  $M_2$  and  $M_3$  coincident;  $M_{2+3}$  remote from  $CuA_1$  at base;  $CuA_1$  and  $CuA_2$  separated. Hindwing pale gray; apex obtuse; termen slightly sinuate;  $Rs$  and  $M_1$  connate;  $M_3$  and  $CuA_1$  connate. Fore and midtibia dark fuscous outwardly; Hindtibia clothed with orange gray hair-like scales.

Male genitalia (Figs. 58, 58a): Uncus slender, with a pointed apex. Tegumen moderate. Gnathos longer than uncus, with pointed apex. Valva broad, narrowed at basal 1/4; distal part almost rectangular, with round distal margin. Saccus rather short. Aedeagus slender, tapered to apex, bent at middle; apex pointed.



**Figs. 56–59.** Male (a: aedeagus) and female genitalia: 56. *A. sichunica* n. sp., male; 57. ditto, female; 58. *A. leukosa* n. sp., male; 59. ditto, female. (Scale: 0.5 mm).

Female genitalia (Fig. 59): Apophysis anterioris very short, about 1/4 length of apophysis posterioris. Lamella postvaginalis triangular, deeply emarginate medially on caudal margin. Ductus bursae narrow, shorter than corpus bursae, heavily sclerotized on one side. Corpus bursae ovate, large; signum large, fighter plane-like with triangular lateral arms.

**Types.** Holotype: male, Mt. Jianfengling, Prov. Hainan, 19 V 1978, gen. prep. no. CIS-4561. Paratypes: 2♀, 1♂, same locality as the holotype, 21 V 1978 gen. prep. no. CIS-4865, W-89215, W-89216. The holotype is deposited in the IZAS and a male paratype in the CIS.

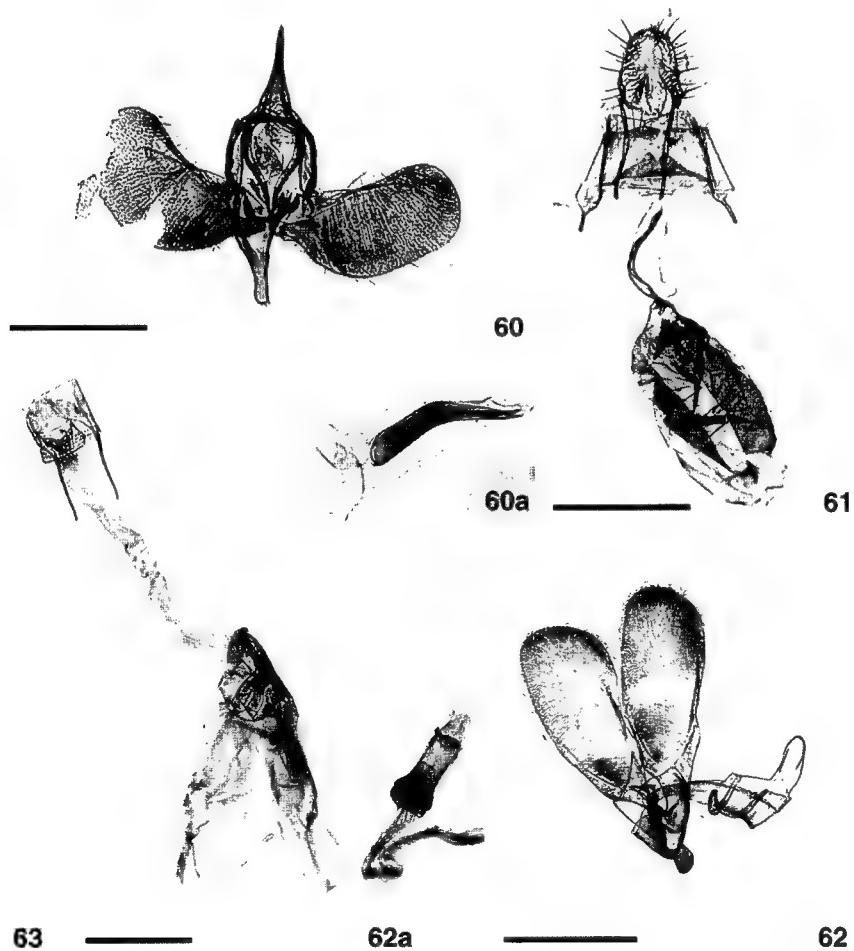
**Distribution.** China.

**Etymology.** The specific name is derived from *G. cuspidis* (= pointed), referring to the pointed uncus.

**17. *Autosticha leukosa* Park and Wu, sp. nov. (Figs. 17, 30, 60, 60a, 61)**

**Diagnosis.** This species is superficially close to *A. sichuanica* sp. nov., but differs from the latter by the forewing with a trigonal brownish fascia before tornus.

**Description.** Male and female. Wingspan, 14–16 mm. Head creamy white, partly suffused with brownish orange dorso-laterally. Antenna with dark brown pedicel; flagellum with 1st segment dark brown and others pale grayish orange with brownish annulations. Second segment of labial palpus dark brown at basal half and creamy white beyond it, with narrow dark-brown band preapically; 3rd segment shorter than 2nd, with two black bands before middle and before apex. Tegula creamy white. Thorax with brownish spots posteriorly. Forewing ground color creamy white, scattered with brownish scales; two spots at subbasal area; costa with a round brownish spot at middle and the other large suffusion at apical 3/4; 1st discal stigma large, plical small below it, and 2nd as large as 1st at end of cell; a series of brownish dots along termen and 3–4 dots their inner side; a large trigonal, brownish suffusion



**Figs. 60–63.** Male (a: aedeagus) and female genitalia: 60. *A. cuspidata* n. sp., male; 61. ditto, female; 62. *A. pachystica* (Meyrick), male; 63. ditto, female. (Scale: 0.5 mm)

tornus. Venation before with  $R_3$  and  $R_4$  approximate at base;  $R_4$  and  $R_5$  coincident;  $R_4$  to costa;  $M_1$  closer to  $R_4$  at base;  $M_2$  closer to  $M_3$  at base;  $CuA_1$  and  $CuA_2$  stalked at basal 1/4; fringes creamy white, tipped with brownish scales. Hindwing grayish brown; cell short;  $Rs$  and  $M_1$  stalked;  $M_3$  and  $CuA_1$  shortly stalked; fringes concolorous. Hindtibia clothed with pale grayish orange hair-like scales.

Male genitalia (Figs. 60, 60a): Uncus short, heavily sclerotized, broadened basally, with pointed apex. Tegumen short, broad. Gnathos short, broadened basally, with rather blunt apex. Valva broad, almost rectangular, basal 1/4 narrow, distal margin rounded. Juxta shield-shaped. Saccus short. Aedeagus long, slender, tapered to apex.

Female genitalia (Fig. 61): Apophysis posterioris about half length of apophysis anterioris; ostium with two stout dents; antrum indistinct; ductus bursae narrow and short; corpus bursae oval; signum with a pair of sclerotized processes from each of posterior angles, each process with a spine at middle.

**Type.** Holotype: male, Mt. Emei, Prov. Sichuan, 25 V 1979, gen. prep. no. CIS-4562. Paratypes: 2♀, 2♂, same data as the holotype, gen. prep. no. W-89205, W-89204, W-89209, and W-89210. The holotype and paratypes are deposited in the IZAS, and a male paratype in the CIS.

**Distribution.** China.

**Etymology.** The specific name is derived from *G. leukos* (= white), referring to the creamy white wing color.

#### 18. *Autosticha guangdongensis* Park and Wu, sp. nov. (Figs. 18, 64, 64a)

**Diagnosis.** This species is superficially close to *A. cuspidata* sp. nov. and *A. bilobella* sp. nov., but can be distinguished from the latters by the forewing scattered with more blackish scales and the hindwing with  $Rs$  and  $M_1$  stalked near middle. They are easily separable each other by the male genital characteristics.

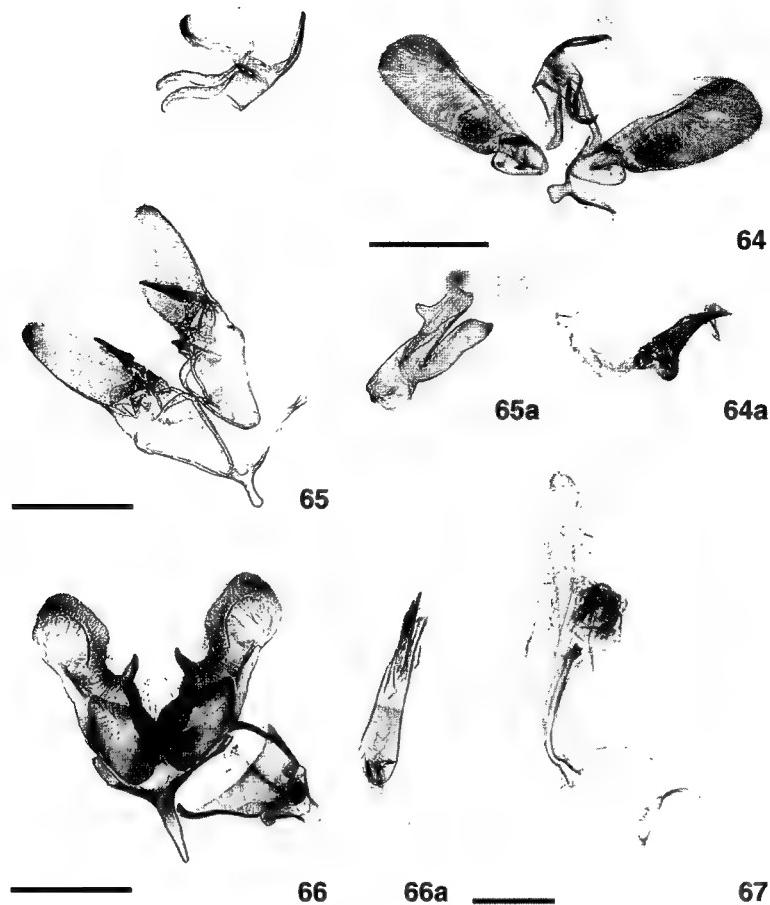
**Description.** Male. Wingspan, 11–12 mm. Head light brown, speckled with fuscous scales. Antenna light brown with dark brown annulations. Second segment of labial palpus slender, fuscous on outer surface; 3rd segment shorter than 2nd, with blackish broad band preapically. Thorax and tegula light brown, speckled with fuscous scales. Forewing ground color brownish gray, scattered randomly with blackish scales; three blackish spots at extreme base, middle, and on inner margin; a dark fuscous streak between subbase and discal stigmata; 1st discal stigma small, plical below it, 2nd one very large; a series of fuscous dots from middle of costa and along termen; tornus suffused with fuscous scales; apex obtuse; termen oblique, not sinuate; fringes concolorous, tipped with dark fuscous;  $R_4$  and  $R_5$  stalked beyond middle;  $R_5$  to costa;  $CuA_1$  and  $CuA_2$  stalked almost at base. Hindwing gray;  $Rs$  and  $M_1$  separated near middle;  $M_3$  and  $CuA_1$  shortly stalked; fringes concolorous. Female is unknown.

Male genitalia (Figs. 64, 64a): Uncus long, slender, curved ventrally, apically pointed; tegumen relatively long. Gnathos long, with sclerotized lateral arms; apex sharply pointed. Valva elongate, broader distally with round distal margin; ventral margin deeply concave at basal 1/4; a strongly sclerotized process at 1/4 on inner surface. Saccus short, trapezoidal. Aedeagus short, about 1/2 length of valva, tapered; apex pointed; cornutus absent.

**Types.** Holotype: male, Botanical Garden, Prov. Guangdong, 24 V 1978, gen. prep. no. W-9921. Paratype: 1♂, same data as the holotype.

**Distribution.** China.

**Etymology.** The specific name is derived from the collecting locality of the holotype.



**Figs. 64–67.** Male (a: aedeagus) and female genitalia: 64. *A. bilobella* n. sp., male; 65. *A. guangdongensis* n. sp.; 66. *A. dayuensis* n. sp., male; 67. ditto, female (Scale: 0.5 mm).

**19. *Autosticha pachysticta* (Meyrick, 1936) (Figs. 19, 62, 62a, 63)**

*Semnolocha pachysticta* Meyrick, 1936. Exot. Microl., 5: 49; Gaede, 1937: 541; Clarke, 1969: 363; Moriuti, 1982: 287.

*Autosticha pachysticta*: Ueda, 1997: 117.

**Diagnosis.** Wingspan 13–14 mm. Superficially similar to *A. sichuanica* sp. nov., but can be distinguished by the narrower forewing.

Male genitalia (Figs. 62, 62a). Uncus short, tongue-shaped. Tegumen short. Gnathos as long as uncus, with pointed apex. Valva elongate, relatively broad; ventral margin slightly concave near middle; distal margin rounded; short, sclerotized process at basal 1/5. Juxta V-shaped. Saccus short, rounded apically. Aedeagus stout, short, without cornutus.

Female genitalia (Fig. 63). Anterior margin of 8th sternite rounded. Lamella antevaginalis trapezoidal, concave on caudal margin. Antrum small, sclerotized along lateral margins. Ductus bursae long; ductus seminalis arising from posterior end of ductus bursae. Corpus bursae ovate; signum plate long, with long, taenoid lateral arms.

*Material examined.* Korea: 3♂, 2♀, Gyulamri, Jeongseon, GW, 23 VII 1996 (JS Lee); 1♀, Moonsanri, Yeongweol, GW, 1996 (KT Park); 1♂, 1♀, Mt. Teahwa-san, Yeongweol, GW, 14 VII 1998 (SM Lee); 1♀, Mt. Inwang-san, Seoul, 23 VII 1998 (SY Shim); 1♂, Mt Mireok-san, 14 VI 1997 (Bae, Paek, Lee, Ahn). China: 1♂, Mt. Emei-shan, Prov. Sichuan, 23 V 1979, gen prep. no. W-89220. Japan: widely distributed from Honshu to Ryukyus (Ueda, 1997).

*Distribution.* Korea, Japan, and China.

*Remarks.* The species was described from Kyushu, Japan, based on a single male. The type is deposited in the Natural History Museum, London.

## 20. *Autosticha bilobella* Park and Wu, sp. nov. (Figs. 20, 65, 65a)

*Diagnosis.* The species is superficially close to *A. cuspidata* sp. nov. and the following new species, but it can be distinguished by the genital characteristics.

*Description.* Male. Wingspan: 11–12 mm. Head pale brownish orange. Antenna pale brownish orange; pedicel dark brown; flagellum with pale brown annulations. Second segment of labial palpus very stout, fuscous at basal half and paler beyond half on outer surface; 3rd segment as long as 2nd, pale grayish orange. Thorax and tegula pale brownish orange. Forewing ground color brownish orange; blackish scales sparsely scattered irregularly; a blackish spot at extreme base on costa and the other on inner margin; costa almost fuscous before middle; discal stigmata relatively large, 1st at middle, plical elongate, situated obliquely below the 1st, and 2nd at end of cell; 3–4 fuscous dots along preapical part of costa and 4–5 along termen; tornus suffused with fuscous scales; apex obtuse; termen slightly sinuate; fringes concolorous, tipped with brown; R<sub>4</sub> and R<sub>5</sub> stalked near 2/3; R<sub>5</sub> to costa; M<sub>1</sub> closer to R<sub>4+5</sub> at base; M<sub>2</sub> closer to M<sub>3</sub> at base; CuA<sub>1</sub> and CuA<sub>2</sub> stalked at basal 1/4; fringes concolorous. Hindwing pale gray; fringes concolorous. Hindtibia pale grayish orange outwardly; Rs and M<sub>1</sub> separated at base; M<sub>3</sub> and CuA<sub>1</sub> shortly stalked. Female is unknown.

Male genitalia (Figs. 65, 65a). Uncus relatively long, heavily sclerotized; apex blunt. Gnathos relatively long, with a heavily sclerotized apical part. Valva convex at 2/5 on ventral margin; a heavily sclerotized, pepper-shaped, free lobe on inner surface and a short, triangular process at 2/5 on costa. Saccus short, with a rounded apex. Aedeagus divided asymmetrically into two branches; about 3/5 length of valva, left one with a digitate process at 2/3; cornutus not presented.

*Types.* Holotype: male, Botanical Garden, Prov. Guangdong, 8 V 1978, gen. prep. no. CIS-4564. Paratype: 1♂, Mt. Jiulianshan, Prov. Jiangxi, 24 V 1977, gen. prep. no. W-9941. The holotype is deposited in the IZAS and a male paratype in the CIS.

*Distribution.* China.

*Etymology.* The specific name is derived from the shape of aedeagus, which forked in to two branches.

## 21. *Autosticha dayuensis* Park and Wu, sp. nov. (Figs. 21, 66, 66a, 67)

*Diagnosis.* This species is similar to *A. guangdongensis* sp. nov. or *A. bilobella* sp. nov., in superficial appearance, but can be easily distinguished by the separated CuA<sub>1</sub> and CuA<sub>2</sub> of the forewing and the difference in the male genitalia. The characteristic shape of the valva is a separable character from the all known species.

*Description.* Wingspan, 11–12 mm. Head pale orange. Antenna grayish orange with dark brown annulations. Second segment of labial palpus slender, brownish gray, speckled with

fuscous at basal 2/3 on outer surface, with dark brown, broad band preapically; 3rd segment as long as 2nd. Thorax and tegula pale orange, speckled with fuscous scales. Forewing ground color pale orange, scattered irregularly with blackish scales; three well developed discal stigmata; 1st stigma at middle, plical below it, 2nd one beyond cell; a series of fuscous dots from middle of costa and along termen; tornus suffused with fuscous scales; apex obtuse; termen oblique, not sinuate; fringes concolorous, tipped with dark fuscous; R<sub>4</sub> and R<sub>5</sub> stalked beyond middle; R<sub>5</sub> to apex; CuA<sub>1</sub> and CuA<sub>2</sub> separated; distance M<sub>2</sub>-M<sub>3</sub>, M<sub>3</sub>-CuA<sub>1</sub>, and CuA<sub>1</sub>-CuA<sub>2</sub> almost same. Hindwing gray; Rs and M<sub>1</sub> shortly stalked; M<sub>3</sub> and CuA<sub>1</sub> connate; fringes concolorous.

Male genitalia (Figs. 66, 66a): Uncus short, broad, hat-shaped, slightly pointed at apex. Gnathos short, broad, rounded apically; Valva somewhat dumbbell-shaped; costa deeply concave beyond middle and a strongly sclerotized, digitate lobe before it; sacculus large, corn-shaped. Saccus long, with a rather pointed apex. Aedeagus as long as valva, slender, with a bundle of needle-shaped cornuti in vesica.

Female genitalia (Fig. 67): Eighth sternite convex at middle. Apophysis posterioris about 1.5 times length of apophysis anterioris; lamella postvaginalis trapezoidal; ostium clavate, with round distal margin; antrum indistinct. Ductus bursae long and narrow. Corpus bursae, oval, as long as ductus bursae; signum trigonal, with recurved, strongly sclerotized lateral arms.

*Types.* Holotype: male, Dayu, Prov. Jiangxi, 16 VI 1977, gen. prep. no. W-9931. Paratypes: 1♀, 1♂, same data as holotype, gen. prep. no. CIS-4570 (♂), W-9951 (♀). The holotype is deposited in the IZAS and a male paratype in the CIS.

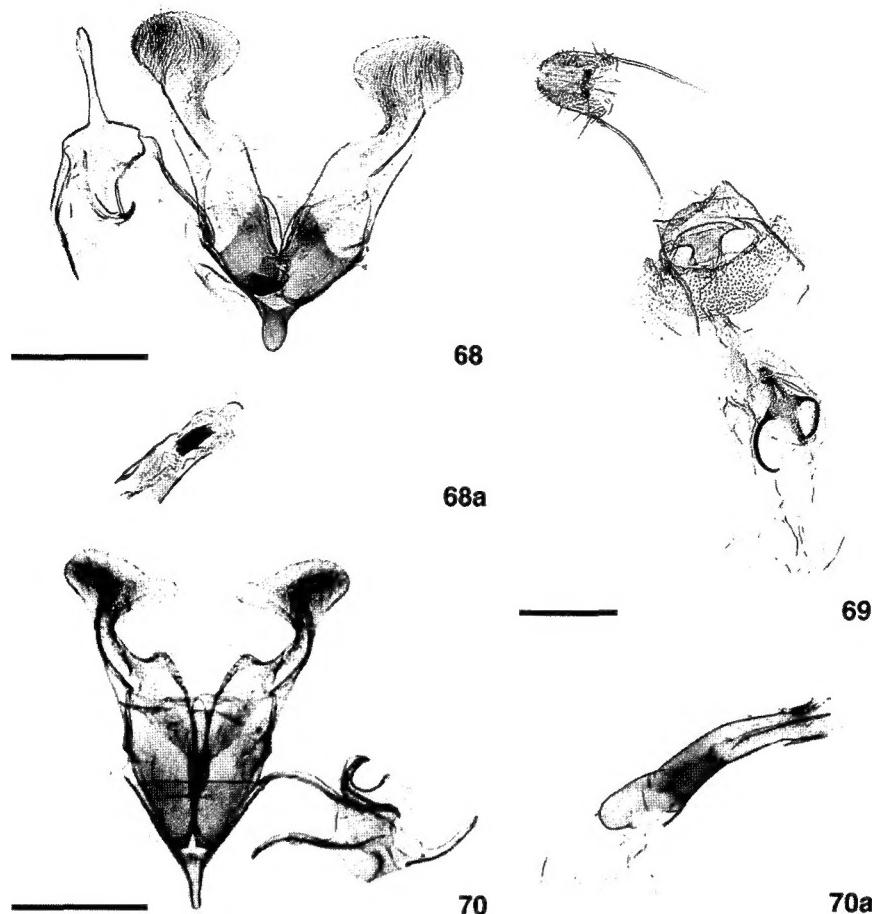
*Distribution.* China.

## 22. *Autosticha pyungyangensis* Park and Wu, sp. nov. (Figs. 22, 31, 68, 68a, 69)

*Diagnosis.* This species resembles the ordinary members of the genus in superficial character, but it differs from others by the common stalk of R<sub>3</sub> with R<sub>4+5</sub> on the forewing. It is superficially close to the following new species, but can be differentiated by the shape of the valva in the male genitalia.

*Description.* Forewing length: 12–13 mm. Head pale grayish orange. Antenna pale brownish orange, with brownish annulations; pedicel speckled with fuscous scales. Second segment of labial palpus densely irrorated with dark fuscous scales on outer surface, grayish orange at apex; 3rd segment slightly shorter than 2nd, sparsely scattered with dark fuscous scales. Forewing ground color pale grayish orange, sparsely speckled with brownish; costa fuscous at extreme base; a large fuscous dot subbasally on inner margin; discal stigmata dark brown: 1st near mid. of cell, plical below it, and 2nd at end of cell; four dark brown dots along posterior half of costa and another four along termen; some fuscous scales speckled along inner margin; apex somewhat acute; fringes concolorous, with two light brown pre and apically. Venation with R<sub>3</sub> stalked with R<sub>4+5</sub> at basal 2/5; R<sub>4</sub> and R<sub>5</sub> stalked about 2/3; R<sub>5</sub> to termen; M<sub>2</sub> very close to M<sub>3</sub> at base; CuA<sub>1</sub> and CuA<sub>2</sub> stalked at basal 1/5. Hindwing grayish yellow; fringes concolorous; Rs and M<sub>1</sub> approximated; M<sub>3</sub> and CuA<sub>1</sub> shortly stalked.

Male genitalia (Figs 68, 68a). Uncus elongate, clavate, with round apex. Gnathos relatively long; apical part heavily sclerotized, with a pointed apex. Tegumen moderate size in length. Valva with costa deeply emarginate beyond 2/3, forming a neck; distal part broadly expanded, wider than length, bearing dense setae on inner surface; ventral margin slightly convex at basal 1/3, then straight to 2/3 and slightly emarginate before distal part. Saccus short, somewhat ovate. Aedeagus about 3/5 length of valva, tapered, with blunt apex; cornuti consist of a series of brush-like spines.



**Figs. 68–70.** Male (a: aedeagus) and female genitalia: 68. *A. pyungyangensis* n. sp., male; 69. ditto, female; 70. *A. hainanica* n. sp., male. (Scale: 0.5 mm)

Female genitalia (Fig. 69). Apophysis posterioris about 1.3 times the apophysis anterioris. Eighth sternite slightly convex, with a small emargination at middle. Lemella postvaginalis mushroom-shaped; distal margin gently convex, with sharply pointed lateral apices. Ductus bursae about 1/2 length of corpus bursae. Corpus bursae oval; signum with a pair of heavily sclerotized, C-shaped, long lateral arms.

**Types.** Holotype: male, Mt. Ryongak-san, Pyungyang, North Korea, 12 VII 1882 (Forro & Ronkay), gen. prep. no. CIS-4929. Paratypes: Taiwan—1 ♂, Sozan, Taiwan, 12 V 1935 (Issiki), gen. prep. no. USNM-92434; 1 ♀, same data as the holotype, gen. prep. no. USNM-92432; 1 ♂, Taihoku, Taiwan, 8 V 1935 (Issiki), gen. prep. no. USNM-92429, in the USNM. China—1 ♂, 2 ♀, Linjiangzheng, Prov. Jiangxi, China, 7–8 VI 1975, gen. slide W-88053 (♂), 88054 (♀), in the IZAS. Korea—1 ♂, Gwangleung, GG, Korea, 10 VII 1982 (KT Park), gen. prep. no. CIS-4844; 1 ♀, Chuncheon, GW, Korea, 10 VII 1982 (KT Park), gen. prep. no. CIS-4843; 1 ♀, Mt. Jeombong-san, GW, Korea, 13 VII 1997 (Paek, Lee, Jang, Choi, & Kim), gen. prep. no. CIS-4840. The holotype and three female paratypes are in the CIS,

Korea and other types are in the USNM and ZIAS, China.

*Distribution.* Korea, China, and Taiwan.

*Etymology.* The specific name is derived from the collecting locality of the holotype.

### 23. *Autosticha hainanica* Park and Wu, sp. nov. (Figs. 23, 70, 70a)

*Diagnosis.* This species is similar to the preceding new species in both the superficial and male genital character, but can be differentiated from the latter by the forewing venation, the inwardly extended valva in the male genitalia, and larger aedeagus.

*Description.* Forewing length: 13–15 mm. Hardly separable from the preceding species in superficial characters. Forewing ground color more yellowish; costa with fuscous scales at extreme base and brownish orange beyond it. Venation with  $R_3$  separated from  $R_{4+5}$  at base; other veins similar to those of the preceding species. Hindwing pale gray; termen sinuate; finge concolorous;  $Rs$  and  $M_1$  shortly stalked;  $M_3$  and  $CuA_1$  shortly stalked. Hindtibia with pale grayish orange, rough scales above and irrorated with brownish scales on outer surface.

Male genitalia (Figs. 70, 70a). Similar to those of the preceding species, but differs from it by the following: distal part of valva extended inwardly; costa more deeply emarginated beyond 3/5; saccus narrow and longer; aedeagus extremely large, about 5/6 times of valva, with a long, needle-like cornutus.

*Types.* Holotype: male, Mt. Jianfengling, Prov. Hainan, 24 III 1984, gen. prep. no. CIS-4560. Paratype: 2 ♂, same data as the holotype, gen. prep. no. W-9943. Types are in the IZAS, China.

*Distribution.* China.

*Etymology.* The specific name is derived from the collecting locality of the holotype.

*Remarks.* This species, as well as the preceding new species, *A. pyungyangensis*, is superficially similar to the common members of the genus, but has somewhat different shape of the valva in the male genitalia which can be considered to be separated from this genus. It is needed a further study to clarify their generic status. We tentatively place these last two species in this genus *Autosticha*.

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